

American Aviation



25c

The News Magazine of Air Transportation

SEPT. 15, 1949

A Guest Speaks His Piece

(It has been very rare indeed when the editor of this magazine has turned over space in these editorial columns to guests. Guest editorials, by and large, are usually innocuous. But the following contribution states so well the case for lower airline fares that the editor bows out temporarily and lets the

guest speak. Its author is not and never has been an airline executive but has been thoroughly familiar with the industry for 20 years and must remain anonymous for various reasons. We don't subscribe 100% to his views, but we think you'll find his

comments provocative.—W. W. P.)

A CLOSE inspection of the performance statistics of the scheduled airlines indicates that the primary economic trouble confronting the airlines today is that of low load factor. If all of the elements contributing to the present low load factor of the airlines could be analyzed properly, it doubtless would be learned that three of these account for a very high percentage of empty seats.

The first is fear of flying; the second is unreliability of performance; and the third is cost. A correction of the first two requires long term effort. The cost factor is one which the airlines might well do something about in short order.

As the months go by, it becomes more and more obvious that a large segment of the public wants to fly but cannot afford to fly on the scheduled airlines. If the facts could be determined, it probably would be evident immediately that a very high percentage of airline passengers fall in the category of individuals traveling on expense accounts where someone else pays the bill. Similarly it probably would be equally surprising to learn that a very low percentage of passengers pay their fares from their own pockets. Another rather interesting associated fact is that only the cheapest form of public transportation, namely the bus, and the highest form of public transportation, namely the airlines, generally fail to provide distinct classes of service for individuals of various economic levels.

Could it be, that the airlines, in spite of talk to the contrary, have added frills and non-essential services which have priced their passenger seats out of the financial reach of the average man who must pay his own fare from his own pocket?

(Turn to Page 8)



CAL's Veteran Operations Head

O. R. (Ted) Haueter, v.p.-operations for Continental Air Lines for past decade, has had a varied and colorful aviation career since first learning to fly 28 years ago. With background as barnstormer, test pilot, airline pilot, and aviation executive, he is firm believer in a conservative operating program, yet has been staunch promoter of procedures and instruments which have improved CAL's operating efficiency and dependability.

In This Issue

**Better Deal for Industry
In New CAA Leadership ..11**

**CAB Moves to Drop
Florida Feederline ..12**

REFERENCE COPY

MANAGEMENT

SALES

OPERATIONS

ECLIPSE-PIONEER

SERVING AVIATION

With the World's Finest Aircraft Instrument and Accessory Equipment...

AUTOMATIC PILOTS ENGINE INSTRUMENTS

Autosyn* and Magnesyn* Remote
Indicating Systems for:
Fuel Flow
Fuel Pressure
Hydraulic Pressure
Liquid Level
Manifold Pressure
Oil Pressure
Temperature
Torque Pressure
Water Pressure
Manifold Pressure Gauges
Electric Tachometer Systems

FLIGHT INSTRUMENTS

Accelerometers
Airspeed Indicators
Gyro Horizon Indicators
Rate of Climb Indicators
Turn and Bank Indicators

FLIGHT PATH CONTROL SYSTEMS NAVIGATION INSTRUMENTS

Driftmeters
Dual Radio and Magnetic
Compass Indicators
Gyro Flux Gate* Compasses
Magnetic Compasses
Sextants

MISCELLANEOUS INSTRUMENTS

Amplifiers
Differential Pressure Actuated
Switches
Humidity Indicating Systems
Oxygen Regulators
Position Indicating Systems
(flap, landing gear, etc.)
Warning Units for:
Fuel Pressure
Manifold Pressure
Oil Pressure
Vacuum
Water Pressure

AIR PUMPS

ENGINE CONTROL EQUIPMENT

Automatic Engine Controls
Boost Controls

ENGINE STARTING EQUIPMENT

Booster Coils
Direct Cranking Electric Starters
Starter Gear Boxes

HYDRAULIC EQUIPMENT

Fluid Metering Pumps
Fluid Check and Pressure Relief
Valves
Hydraulic Pumps
Motor Driven Hydraulic Gear Pumps

ICE ELIMINATION EQUIPMENT

De-Icer Air Distributing Valves
De-Icer Control Valves
De-Icer Valve Timers

POWER SUPPLY GENERATING EQUIPMENT

Alternators
Dynamotors
Engine Driven DC Generators
Inverters
Motor Generators

POWER SUPPLY REGULATING EQUIPMENT

Carbon Pile Voltage Regulating
Panels
Overvoltage Protectors
Relay Switches
Reverse Current Cutouts

MISCELLANEOUS ACCESSORIES

Actuators
Air Filters
Gear Boxes
Oil Separators
Pressure Relief Valves
Propeller Governor Controls
Suction Regulating Valves
Suction Relief Valves

ALSO SERVING...

THE AUTOMOTIVE INDUSTRY

with
Electric Speedometer Systems • Electric Tachometer Systems

THE ELECTRONICS FIELD

with
Amplifiers
Chronotron* Time Delay Tubes • Convecron* Vertical
Sensing Tubes • U.H.F. Noise Diode Tubes

THE INDUSTRIAL FIELD

with
High Precision Autosyn Transmitters, Receivers, Resolvers
and Differentials • Remote Torque Control Systems •
Synchro-switches • Seamless Flexible Metal Hose

*REGISTERED TRADEMARK OF BENDIX AVIATION CORPORATION



Eclipse-

Pioneer DIVISION OF

TETERBORO, NEW JERSEY



AVIATION CORPORATION



The Birdmen's Perch

By *Major Al Williams, ALIAS, "TATTERED WING TIPS,"*
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.



Gentlemen! The Little Known Facts Dept. is officially reopened!

(We closed up temporarily while we announced Gulfpride Aviation—Series D—the world's finest oil for horizontally opposed aircraft engines.)

We're going to be a little selfish though, and monopolize the department with our own "Facts" this month.

We got a new Gulfhawk, you see. Naturally, we want to tell you all about it and show you pictures. (Wouldn't you?)

Well, there she is, in front of the old

Gulfhawk. She's a Grumman F8, and so help us! She'll scamper up to 10,000 feet in 100 seconds *from the chocks!* We can get 2800 hp out of her with water injection, which is almost enough to get from here to there before we leave here!

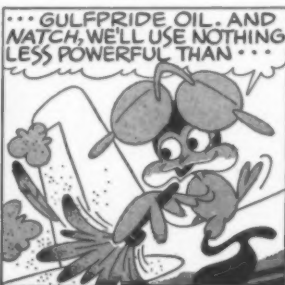
With all that horsepower, the Navy version can get off a flight deck in practically zero winds. And mind you, we unloaded 1300 lbs. of armament from our ship. Imagine what ours will do!

We can't tell you a whole lot about her yet because we haven't really had a chance

to get acquainted with her. But as we get more time in her, we'll keep you posted.

Meanwhile, after all your letters asking that the Little Known Facts Dept. be kept, it's time for you to start sending said "Facts" in again. Same rewards: Commission as Perch Pilot (bottom rung) for 1 printed "Fact". . . Senior Perch Pilot's rating for 5 "Facts". . . and Command rating for 20!

(And don't forget: use the new Gulfpride Aviation—Series D in horizontally opposed engines!)



BACKGROUND & TRENDS

Fare Cleavage: While most of domestic trunk airlines have now raised fares for third time since war to a general 6c per mile level, there is definite cleavage on two major issues: surcharge for deluxe services offered by DC-6's and Constellations and round-trip discounts. American Airlines holds firm against both extra-fares and discounts. Airlines have not been so split on fare issue since prewar days. (See page 14).

Blow for Feeders: CAB has showed its hand holding future feederline policy, and revealed clear intention of folding up some of the carriers when their temporary certificates expire. First slated to go is Florida Airways. (See page 12). Cost to government weighed against public service rendered will be determining factor in continuation of feeders.

Empty Seat Problem: Domestic airlines may be expected to study closely the reduced-fare "tourist" service being instituted by Pan American Airways to Puerto Rico in effort to boost travel volume. (See page 14.). Also to bear watching is different approaches being taken by American and United toward solving the first-of-the-week empty seat problem. American's plan is to maintain even number of schedules throughout week but offer special family discounts on Monday-Tuesday-Wednesday. United, however, is trying a cutback in schedules during slack period to keep load factors up.

No Comment: Reports are current that Oliver P. Echols, president of Aircraft Industries Association, has received offer to become board chairman of Northrop Aircraft at substantial boost in salary. Echols did not deny report, but declined to comment.

No Progress: The Delta-National merger which appeared likely to happen some months ago has been stalemated. Delta has been anxious to effect a deal but National is still exploring and has flirted with at least three other carriers, including Pan American. Officially, National says its sole interest is a merger with Delta, but the project hasn't moved forward for quite some time.

Trade Schools for Airlines: A program under which aviation trade schools may be used in future training of airline maintenance employees is being studied, with Aeronautical Training Society as coordinator. Trade school-airline meetings will be scheduled soon.

Behncke Likely: Although there have been several movements underway to retire Dave Behncke from active management of the Air Line Pilots Association, the opposition has been very quiet of late and Behncke is expected to be re-elected president at the fall meeting. Relatively few rank and file ALPA members are overwhelmingly enthusiastic about Behncke, but no good opposition candidate has appeared and the Old Guard is pretty firmly entrenched. Most members seem sufficiently satisfied with Behncke's leadership not to want to disturb the scene, or at best are indifferent to organization problems.

Ryan Term Up: Term of CAB Vice Chairman Oswald Ryan, Republican, is next to expire, Dec. 31, 1948. Ryan is one of two Republicans and under the law there must be three out of the five members from the political party in office. Term of Josh Lee, Democrat, expires Dec. 31, 1949. Other terms are: Russell Adams, Democrat, Dec. 31, 1950; Harold Jones, Republican, Dec. 31, 1952; Chairman Joseph J. O'Connell, Jr., Democrat, Dec. 31, 1953.

AMERICAN AVIATION

The News Magazine of Air Transportation

Vol. 12 No. 8  Sept. 15, 1948

1025 Vermont Ave., N.W.
Telephone—STerling 5400

Washington 5, D. C.
Cable—AMERAV

Editor and Publisher

WAYNE W. PARRISH

Editorial Board:

ERIC BRAMLEY Executive Editor	DAVID SHAW Chairman	LEONARD EISNER Managing Editor
KEITH SAUNDERS Assistant to the Managing Editor		

Editorial Associates: Gerard B. Dobben, Clifford Guest, James J. Haggerty, Jr., Fred S. Hunter, W. D. Perreault, Daniel S. Wentz II.

American Aviation is published 1st and 15th of each month by American Aviation Associates, Inc., Washington, D. C. Printed at the Telegraph Press, Harrisburg, Pa. Subscription rates for United States, Mexico, Central and South American countries—\$3.00 for 1 year; \$5.00 for 2 years. Canada—\$3.50 for 1 year; \$6.00 for 2 years. All other countries—\$4.50 for 1 year; \$8.00 for 2 years. Entered as Second Class matter in Washington, D. C., and Harrisburg, Pa.

Publishing Corporation: American Aviation Associates, Inc., Wayne W. Parrish, president; Albert H. Stackpole, Eric Bramley, David Shaw, vice presidents; E. J. Stackpole, Jr., secretary-treasurer.

West Coast Office: Park Central Building, 412 West Sixth St., Los Angeles 14, Calif. Trinity 7997. Fred S. Hunter, manager.

Correspondents in principal cities of the world.

Other Publications

American Aviation Daily (including *International Aviation*): Published daily except Saturdays, Sundays, and holidays. Subscriptions: \$15 one month; \$170 one year. Clifford Guest, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy \$5.00. Dallas R. Long, managing editor.

Official Airline Guide (formerly *American Aviation Air Traffic Guide*): Monthly publication of airline schedules, rates and regulations. Subscriptions: U. S. and Latin America \$7.50 one year; Canada \$8.00. All other countries \$9.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. State 2154. H. D. Whitney, managing editor.

Air Tariff Reports: Issued three days a week from tariff and fare data filed by carriers with the Civil Aeronautics Board. Presented in condensed, coded form for quick-reference by air shippers and carriers. Separate reports on cargo and passenger filings. Subscription rates: \$75 yearly for both reports; \$50 yearly for either cargo or passenger reports.

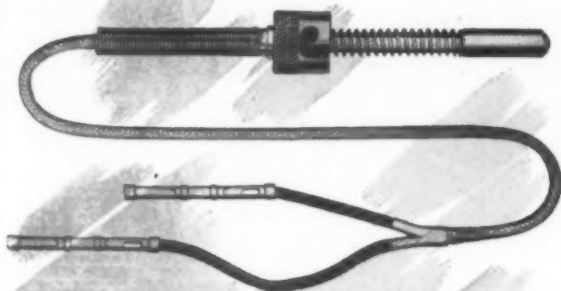
INDEX

Air Terminals	38	Management	11
Airline Commentary	21	Manufacturing	40
Background & Trends ..	4	National Defense	18
Books	50	Obituary	50
Calendar	16	Operations and Maintenance	23
Editorial	1	Personnel	20
Fixed-Base Operations ..	47	Safety Slants	26
Index to Advertisers ..	49	Wings of Yesterday	50
Letters	50	Traffic and Sales	43

EDISON

Cylinder Head Temperature Measuring Systems

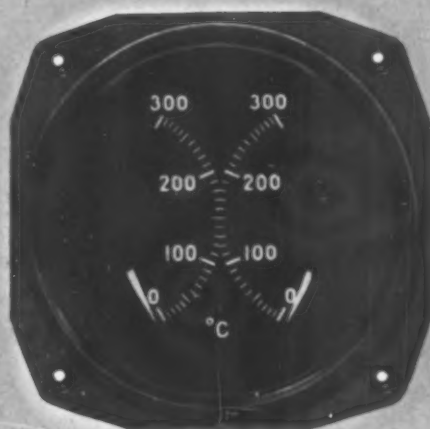
These offer the accuracy of electrical resistance thermometry with tip-sensitive bulbs and light, simple, moving-magnet indicators. They require only lightweight copper wiring whose resistance is non-critical. No delicate hairsprings; no moving coils.



Tip-Sensitive Resistance Bulb

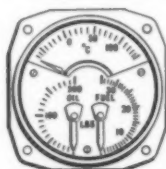


Single Electrical Indicator



Dual Electrical Indicator

Other **EDISON**
aircraft
systems and
instruments



Engine Gage Unit, incorporating Electrical Oil Temperature Indication



Temperature Measuring Systems with AN Resistance Bulbs and Electrical Thermometer Indicators



Oil and Fuel Pressure Gages



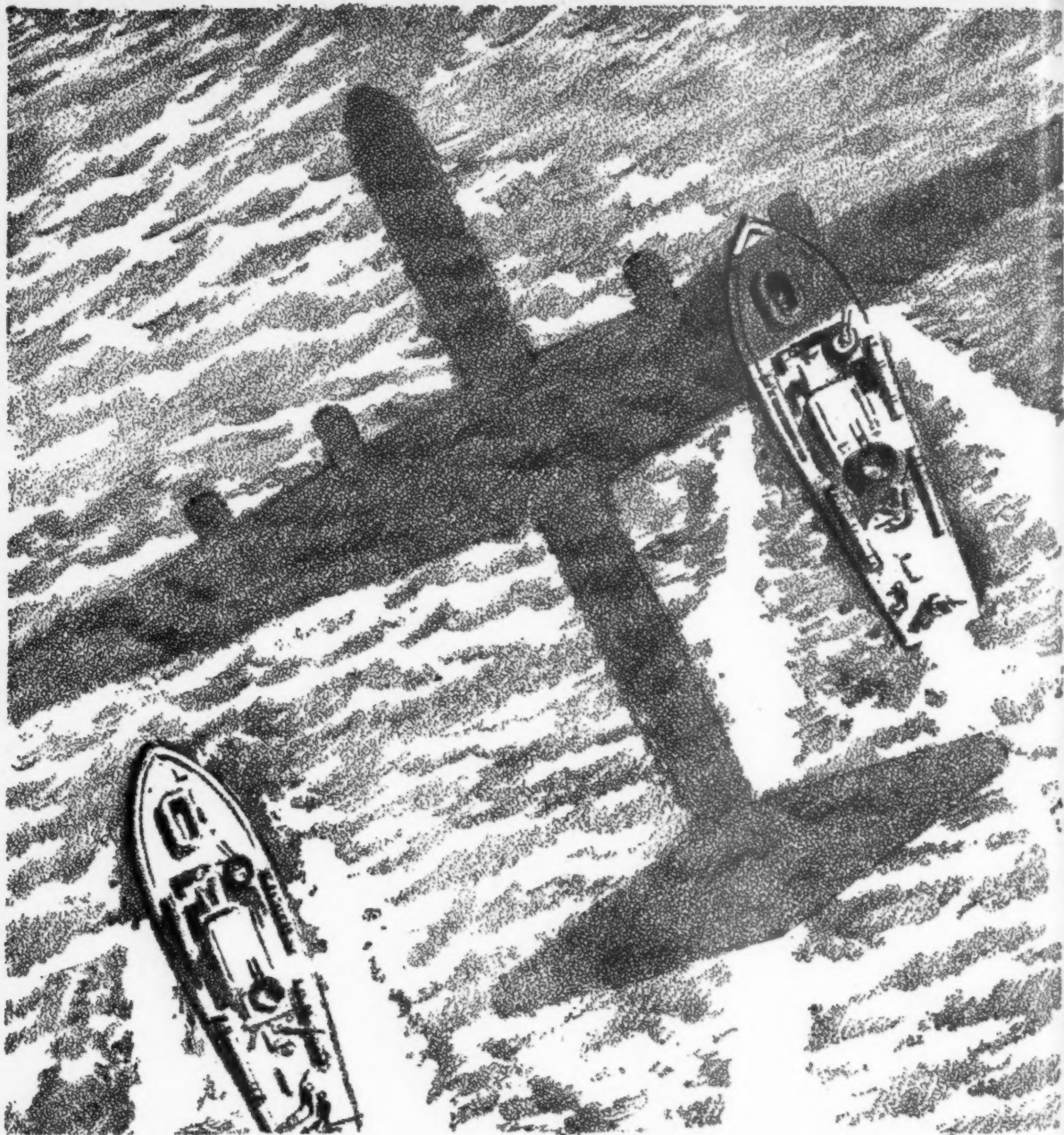
Write for literature on instruments or systems in which you are interested.



EDISON

AIRCRAFT SYSTEMS AND INSTRUMENTATION

Thomas A. Edison, Incorporated, Instrument Division, 188 Lakeside Avenue, West Orange, New Jersey



WASP MAJORS POWER THE CONSTITUTION •

Lockheed Aircraft's huge Constitution, one of the largest transports ever to take to the air, is now being readied to serve the U.S. Navy. Powered by four dependable Pratt & Whitney Wasp Major engines, capable of developing 14,000 horsepower, this 92-ton giant is able to carry nearly 200 people and thousands of pounds of cargo aloft—safely and swiftly.



PRATT & WHITNEY AIRCRAFT

East Hartford, Connecticut

One of the four divisions of
UNITED AIRCRAFT CORPORATION

N
syst
For
cam
pay
lish
ther
doll
U
that
mon
ATC
Air
her
B
the
any
turn
airo
kee
flyin
and
to a
esse
N
it v
men
for
as t
ling
Dou
and
Mc
T
cati
inst
supp
Air
of M
But
serv
min
W
stro
T
the
the
inde
W
For
we
exp
ally
Arm
plet
liai
O
defin
som
to v
give
ger
wort
to a
legis
SEPT

BACKGROUND & TRENDS

Can Unification Succeed?

NOT VERY long ago, the military services of the United States had two separate and distinct air transport systems—the Air Transport Command of the Army Air Forces and the Naval Air Transport Service. But along came a thing called UNIFICATION. The taxpayer was paying too much for the support of these military establishments, said the boys on Capitol Hill. Let us merge them and save the taxpayer a large slice of his tax dollar.

Undoubtedly, the boys meant well. It is quite obvious that by eliminating one command, you can save some money. But what actually happened? They merged the ATC and the NATS into a new command called Military Air Transport Service (MATs), which was widely heralded as the true beginning of UNIFICATION.

But the merging authorities overlooked one item . . . the passionate reluctance of the services to part with any portion of their empires. The Navy reluctantly turned over 39 Douglas R5D (DC-4) and 4 R4D (DC-3) aircraft and about three thousand personnel to MATs, keeping, however, 44 R5D's, 13 R4D's, 5 Martin JRM flying boats, 8 Beech JRB's (small utility transports) and one Martin PBM-5. All of these were turned over to a division known as the Fleet Logistic Support Wings, essentially a transport unit.

Nor is the Air Force blameless, despite the fact that it was given command control of MATs under the merger agreement. The Air Force kept a "small unit" for "administrative transport." This small unit, known as the 16th Special Air Mission Group, located at Bolling Air Force Base, Washington, D. C. consists of 56 Douglas C-47's, four remodeled "plush" Boeing B-17's and four North American B-25's.

More Transport Units Than Ever

The resultant effect of this beginning of true unification, then, was to create three transport organizations instead of two. No one will deny the need for air logistic support of the Navy; nor would anyone suggest that Air Force brass be reduced to the humiliating practice of boarding scheduled airplanes on business missions. But the whole air transport network of the military services, scheduled and non-scheduled, logistic or administrative, could be brought under one command.

Why hasn't it been? Because such a move would destroy a couple of little "empires."

Take another angle of this unification thing. Under the terms of the merger, we were supposed to eliminate the Army Air Forces and Naval Aviation and have one independent air service charged with the air defense.

What did we get? Well, we got our independent Air Force which is now swelling to 70-group strength. But we also kept our Naval Aviation—as a matter of fact we expanded it, and it is still expanding, planning eventually on 14,500 planes. And, in addition, we kept the Army Air Force—for the Army, reluctant to drop completely out of the air picture, hung on to more than 500 liaison and helicopter aircraft, and has ordered 225 more.

One point of the unification program which is definitely in need of settlement is the somewhat tiresome argument between the Air Force and the Navy as to who handles strategic bombing. The Air Force was given the primary responsibility under the initial merger terms, but the Navy, fighting hard for an air arm worthy of large scale appropriations, has not been able to accept that fact and has managed to push through legislation for a 65,000-ton super-carrier which will

carry aircraft of B-29 or strategic bombing size.

A lot of people thought that argument was settled last month, when Defense Secretary Forrestal called his sub-secretaries and his Joint Chiefs of Staff together for a parley at Newport, R. I. and brought about an agreement that the Air Force would handle strategic bombing and would decide when and where to employ Navy assistance.

It looked as though the Navy had backed down from its former position. But right on top of this agreement came the news that the Navy has asked aircraft manufacturers to submit designs for an atom-bomb carrying bomber to be used on its big carrier.

Costs More Instead of Less

Unification, too, was supposed to save the taxpayer a lot of money.

However, to date we have not only not saved any money, but unification has actually cost more, due to the establishment of the Department of Defense, the ruling body, and due to the separation of the Air Force from the Army, setting up new departments in the Air Force, the functions of which were formerly handled by the Army.

Another shortcoming of the unified establishment is the failure to evolve a consolidated plan for the defense of the United States, with each component assigned a specific emergency function under a coordinated command. Here again the Air Force-Navy feud enters the picture—for until the two services can agree on the utilization of air power, there can be no coordinated plan.

From the foregoing remarks, one might think that unification has been a complete mess and might better never have been undertaken. Such is not the case. Unification has had its successes.

Chief among the successes is the effective manner in which the Air Force has separated itself from the Army, with a minimum of bickering.

Credit for this separation should go largely to the Department of the Army, for the Army has been able to accept the spirit of unification and resign itself to the loss of a number of its administrative prerogatives (with the notable exception of ground support aircraft).

'Empires' Must Be Destroyed

This is proof that unification can work, provided the merging parties can accept the fact that a well-ordered and unified military establishment is more important to the nation than the maintenance of their little "empires."

There are other minor successes of unification. The services are working together to provide an efficient, common intelligence organization, a joint air navigation system, standard pay and allowances, etc.

Weighing the successes of unification against its failures reveals that, on this first anniversary of its commencement, (it all began Sept. 18, 1947), unification has not progressed very far, but, given half a chance, it can succeed. Some of the deficiencies pointed out herein will cure themselves with time; others can be ironed out. But to build a really unified service two main factors must be conquered: (1) the "empire building" tendencies of the lower echelons and their stubborn refusal to part with prerogatives, and (2) the deep-rooted jealousies of the services.

JAMES J. HAGGERTY, JR.

EDITORIAL

(CONTINUED FROM PAGE 1)

Since the war, the traveling public has indicated its desire and willingness to fly, providing the price is right. No one will deny that non-scheduled operators, for instance, are siphoning a considerable amount of air travel from the scheduled operators, especially on transcontinental runs. On these flights the passengers, perhaps, do not get the same luxurious treatment and are not provided with all of the special services that might be offered on the scheduled airlines. They do obtain the time-saving advantages accruing to air travel; but the overwhelming attraction evidently is the low fare. It was recently estimated that some \$10,000,000 in passenger revenues were realized by the non-scheduled operators in the U. S. on transcontinental trips last year. This seems to be proof enough that when the fare is attractive, a considerable additional segment of the traveling public can be induced to go by air.

In adhering to one class of service, the airlines have been competing consistently with each other in the addition of attractive extras for passenger comfort and pleasure. Now, a different form of competition has reared its ugly head in the form of the non-scheduled operator and apparently present thinking in the domestic airline industry is that the scheduled companies are powerless to meet it without more government help.

THERE APPEAR to be two methods of meeting the competition. The first of these is to have the government throttle the competition through regulating processes of the CAB. The second method is for the airlines to meet competitors on their own terms.

Generally speaking, the first of these two alternatives is not in line with the American concept of business. The public has never thought much of the principle of using government powers to drive competition out of business.

The second of the alternatives is a well accepted American business procedure. To date, it would appear that the airline operators have expended their major efforts in an attempt to have the government regulate the non-scheduled operators out of business, and practically no effort has been spent in trying to take the low fare passenger business away from the non-scheduled competition.

Of course, any one of the airlines has many, many problems to solve. It does not seem impossible, however, for one or more of the companies to establish a service which would give that large segment of middle class people the privilege of flying and saving their personal time without having to pay for all of the extra services which the standard scheduled airline passenger has no alternative but to buy, and which many of these people cannot afford. For instance, it would not seem impossible for one of the large companies to start a regular transcontinental service without meals, without baggage checking, with only the crudest sort of "first come, first serve" reservation system and with only one or two stops enroute to allow passengers to purchase their own food, etc.

The primary difference between such an operation conducted by an airline and one conducted by a non-scheduled operator would be that the airline

might be committed to fly on schedule regardless of passenger load.

Naturally, there will be many objections advanced to counter such a proposition, but if the airlines are to serve the traveling public in the manner in which the traveling public apparently wishes to be served, it behooves the operators to do some serious thinking along the lines of providing service of different classes and costs.

Pan American Airways apparently has decided to do something about its competition to Puerto Rico, other than to request the government to legislate the non-scheduled operators out of business. Will our domestic carriers follow this example or will they continue their efforts, perhaps unsuccessfully, to have the Civil Aeronautics Board force the competition out of business, thus forcing many potential air passengers out of the air and back to surface transportation?

VA Takes A Powder

THERE is bitter irony in the manner with which Veterans Administration is forcing a majority of the nation's flight schools to fold up. Unless immediate relief is forthcoming irreparable damage will have been done to many hundreds and perhaps thousands of small flying fields over the country before snow falls.

Congress made it tough, for the whole VA flight training program. Some of the aircraft manufacturers and some of the larger training schools have opposed the continuance of VA training. Naturally in any such large program there are abuses. But the present fast squeeze-out is inexcusable.

When VA Administrator Carl Gray called in his section chiefs early in August, after Congress had made it clear to VA that it wanted reasonable administration and not extinction of the flight program, there were high hopes that VA would use common sense in certifying students. It was a hollow hope, however. Behind the cagey announcements from VA was an apparent determination to strangle thousands of flight schools by stalling tactics. In some areas not a single student has been certified since July 1.

No one expected the VA program to go on forever, but we question the wisdom of snuffing it off in the midst of summer and on such a wide scale. The program could have been eased off more sensibly. The effect of folding up thousands of small schools within a few months—which will mean the closing of hundreds of useful airfields—will be damaging for aviation as a whole.

There have been many complaints that operators were neglecting commercial training and selling of airplanes in favor of the easy-money training from VA. But the major fault has been with VA in setting up rates and regulations which virtually prohibited an operator from training both vets and civilians. Here again is evidence of the need for a top-level government aviation agency which can set a policy that will provide the widest benefits for all. VA is taking a quick powder and civil aviation, as usual, will suffer from the hasty action.

WAYNE W. PARRISH

AMERICAN AVIATION



Succulent Supper ... *En Route*

Early this morning this lobster was twenty fathoms under the Atlantic. Tonight it will provide the main dish at the Brown Palace Hotel in Denver... all because of modern high-speed air cargo transport.

Air cargo delivers food, medicine, clothing... needed supplies of every kind... in hours instead of days. This, and fast passenger transportation, are vital services the airlines offer American business.

Plane loads of goods or men on time are payloads... and Sperry equipment helps airliners stay on schedule regardless of weather or visibility... helps maintain the schedule reliability so important to air cargo carriers.

Today, many airlines equip their cargo... as they do their passenger transports... with... the Sperry A-12 Gyropilot* for smooth, level flight... the Automatic Approach Control to guide valuable cargos safely down the runway... the Gyrosyn* Compass and other flight instruments for accurate information on position and direction.

These and other well-known Sperry products are designed for long

hours of trouble-free service... are designed to enable airlines to operate their cargo and passenger services more efficiently and more economically... with more profit. For example, the new Engine Analyzer checks engine performance during flight and prevents costly tie-ups on the ground.

Meanwhile, Sperry research and engineering explore new, better ways for moving men and goods by air.

*TRADEMARK REG. U. S. PAT. OFF.



SPERRY GYROSCOPE COMPANY
DIVISION OF THE SPERRY CORPORATION • GREAT NECK, N. Y.

NEW YORK • CLEVELAND • NEW ORLEANS • LOS ANGELES • SAN FRANCISCO • SEATTLE

Research keeps
B.F. Goodrich
FIRST IN RUBBER



Transonic plane's tiny tires hold 200 lbs. of air!

JOHNNY MARTIN, Skyrocket test pilot, shown above right after a landing, says those little tires are the most vital factor in a sonic plane's high-speed take-off. With engine or brake failure, he could let the plane roll to a stop. But if the tires blew out at 150 mph plus, the chances of controlling his little plane would be slim.

The tires on this Douglas-El Segundo Skyrocket, under "refused" take-off conditions, have to take the highest specific loading and highest speed yet required. Because they must be retracted into a very limited space,

they must be extremely small, yet strong enough to take the highest pressure ever used in a tire.

B. F. Goodrich engineers developed the tires that would do the job—for the main wheels, 10-ply nylons only 24 inches high and $5\frac{1}{2}$ inches thick! For the nosewheel, 8-ply nylons 20 inches high, less than $4\frac{1}{2}$ inches thick—all of them designed to carry 200 lbs. air pressure!

Those little tires on this Navy test plane are the strongest, safest tires ever built. They have back of them the long record of B. F. Goodrich engineering development on high

pressure airplane tires—from the first high pressure tires for Navy carrier landings about 20 years ago, to the extra high pressure tires to retract into the thin wings of the Skystreak, sister ship of the newer Skyrocket.

Constant research helps B. F. Goodrich to introduce sound, long-lasting solutions to the tough problems of a growing aviation industry. The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.

B.F. Goodrich
FIRST IN RUBBER

AMERICAN AVIATION

Regional Muddle Already Cleared:

New CAA Outlook Holds Better Deal for Industry

By ERIC BRAMLEY

There's ample evidence that there are going to be developments at the Civil Aeronautics Administration that will result in that agency, much maligned in the past, being set up to do a better job for all phases of the aviation industry.

Already the airlines have had cause to cheer. Del Rentzel, the new Administrator, has sent out a directive designed to settle one of their pet gripes, which has been that no two CAA regions seem to have had the same rules and ideas about any airline's operations. The directive made it clear that the region in which the airline's headquarters are located is responsible over all other regions.

You can look for action on (1) Civil Air Regulations, and (2) internal CAA organization.

The cumbersome and legally-written CAR's are in for some extensive (and maybe spectacular) overhauling. Conferences have already been held with the Civil Aeronautics Board on better ways to develop and administer the regulations.

Some of the probable courses of action can't be discussed now. But there's a feeling that the CAR's in their present form are directed at the most reckless, irresponsible persons and companies, penalizing everyone else in the process.

No overhauling will be attempted without consulting with CAB on all phases. CAA-CAB relations, incidentally, have never been better.

The Rentzel Approach. On internal CAA organization, Rentzel won't make the mistake that has been made in the past by new heads of agencies, of completely upsetting the applecart, of effecting a sweeping reorganization. It's more a question of realigning what is there now—of setting up better working procedures. Again, details can't be discussed, but a realignment is coming.

In mid-August, Rentzel met in a week-long session with CAA's regional managers and deputy administrators to take a "hard look" at programs, policies and organizational structure. The "hard look" was taken. The same group will be back this month, this time to present their ideas on how matters between the regions and the Washington office can be handled more smoothly and expedi-

tiously. Washington personnel will also present their ideas.

For instance, there are over 25 people who now report directly to the Administrator. If personnel in Washington who wrote policies were made directly responsible for those policies, this might be cut substantially. This is only one of the subjects that has been talked over.

Airlines and manufacturers also spoke their pieces last month at a meeting with CAA. It was at this meeting that the regions' actions in handling the airlines were discussed.

Example: an airline operating through several regions had found that no two seemed to have the same rules covering amount of pilot training necessary to lower ILS minimums. The airline was put in the position of trying to coordinate the activities of the regions. Other airlines have found that an airplane certificated in one region hasn't been accepted in another "until some more gadgets have been hung on it."

No Hedging. The Rentzel directive followed by less than two weeks. Addressed to all regional administrators, it said: "You will recall that at the recent

meeting . . . the carriers strongly recommended that a system inspection be established which would enable them to deal only with that region in which their headquarters are located and place the responsibility on that region for coordinating any differences between that region and other regions through which the carrier operates.

"Existing instructions already provide basically for this type of system inspection although some regions may not have always uniformly applied the same inspection standards.

"I agreed . . . that the . . . Administration would implement and clarify existing instructions so as to more clearly place the responsibility for inspection and certification of scheduled air carriers upon the region in which the headquarters of the carrier is located together with the responsibility for coordinating operational matters affecting such carriers with other regions.

"I also believe it essential in order to obtain the highest degree of uniformity in the application and interpretation of our standards, policies, practices and procedures."

Aircraft manufacturers have been acrimonious in their remarks about the way type certification has been handled by CAA. Again, no uniformity among the regions. Steps will be taken to correct this.

In general, reaction to the way Rentzel is tackling the CAA problems has been excellent, and CAA-industry relations are materially improved.



New Deal in CAA Regions— One of Del Rentzel's early moves after taking over as head of CAA was to meet with his regional administrators in effort to eliminate regional irregularities which have been constant trouble source for aviation industry. Rentzel is shown seated at desk on right, with his regional administrators responsible for carrying through new policies. Left to right, seated: John M. Beardslee, 9th Region, Hawaii; Leonard W. Jurden, 5th, Kansas City; George W. Vest, 3rd, Chicago; William M. Robertson, 2nd, Atlanta; standing: Walter P. Plett, 8th, Alaska; Robert D. Bedinger, 7th, Seattle; Ora W. Young, 1st, New York; Lawrence C. Elliott, 4th, Fort Worth; Joseph S. Marriott, 6th, Santa Monica.

CAB Moves to Drop Florida Feeder; Others Threatened

By DANIEL S. WENTZ II

Florida Airways will fly its last trip under a Civil Aeronautics Board certificate next Mar. 28 unless it can get CAB to change its mind. In a decision of paramount importance to the future of feederline experiments, the Board found that public interest does not require the extension of the company's certificate beyond its expiration date or the addition of new points on Florida's Route 75.

At the same time, CAB "reaffirmed its faith" in "the function of local and feeder air service when established in an area characterized by terrain and geographical conditions which impede efficient surface transportation between communities of substantial size and consequently create a need for air service."

In simpler language, CAB still feels that a local airline is needed in an area where land travel—by bus, train or auto—is difficult and if there are enough people who want to travel between sizeable towns. Its decision on Florida Airways showed that Florida does not fit those specifications.

Each on Own Merits. CAB told other feeders what it plans to do about their certificates, too. Each will be studied on its own merits. Board economists and statisticians are now busy working up traffic and cost figures on all local airlines.

Based on the results of these studies, CAB will issue show cause orders to the individual companies "for the purpose of determining whether the public convenience and necessity require the renewal, extension, modification, or possibly elimination of the temporary route structures." These show cause orders will probably indicate CAB's attitude toward the individual companies.

Because the Board thinks it important to get these proceedings underway well in advance of the actual dates the certificates run out, it plans to get the first of these cases going by November or December. This is about a year before the expirations of most of the certificates due to stop in 1949. The same thing will be done later for those certificates expiring after 1949. Among those due to run out next year are Pioneer, Southwest, Empire and West Coast.

Florida's case was based on an application by the airline itself. It asked for a number of new route stops and for a five-year extension of its certificate. Board's unfavorable decision was based chiefly on that past and prospective cost to the Government to keep Florida Airways in the running. "We fully realize

Status of Feeder Certificates

A survey of expiration dates of feederline and special service certificates, which may be affected by CAB policy announcement on feeders, shows the following list of outstanding temporary authorizations due to expire between now and 1951:

Air Commuting (nonoperative) Nov. 7, 1950; Arizona Airways (nonoperative) June 29, 1951; Central Airlines (nonoperative) May 14, 1950; Challenger Airlines, March 31, 1949; Chesapeake Airways, Oct. 1, 1948;

Empire Air Lines, Sept. 28, 1949; Florida Airways, March 28, 1949; Iowa Airplane Co. (nonoperative) June 29, 1951; Island Air Ferries (nonoperative) Aug. 15, 1951; Los Angeles Airways, Oct. 1, 1950;

Monarch Air Lines, March 31, 1949; Parks Air Lines (nonoperative) Mar. 31, 1951; Piedmont Airlines, Dec. 12, 1950; Pioneer Air Lines, Nov. 14, 1949; Robinson Aviation (nonoperative) June 28, 1951;

Southwest Airways, Nov. 22, 1949; Trans-Texas Airways, May 14, 1950; Roscoe Turner Aeronautical Corp. (nonoperative) Feb. 6, 1951; West Coast Airlines, Nov. 22, 1949; E. W. Wiggins Airways (nonoperative) Dec. 13, 1949;

Wisconsin Central, Oct. 3, 1950; Yellow Cab Co. of Cleveland (nonoperative) Mar. 3, 1951.

that this decision places the applicant in an unenviable position and we do not mean to imply . . . that the apparent failure of the experiment is due to want of diligence on its part," CAB said.

Figures cited by CAB in the decision gave the best clue to the Board's action. From Jan. 10, 1947, when operations were begun by Florida, through May 31, 1948, the company carried 12,031 passengers. Average operating cost (unadjusted) for that period was 77.7c per plane mile.

During the time, Florida received \$520,295.05 in mail pay under a temporary sliding scale mail rate which worked out to an average of 52c per plane mile. The company also earned \$85,390.78 in passenger revenues. Its net operating loss was \$181,096.32.

CAB said that Florida Airways' final mail rates—depending on adjustments in allowable investment and permitting a 7% return on invested capital—may exceed \$707,000 or 69c per airplane mile before taxes.

\$58 Per Passenger. "These figures interpreted in another manner reveal that this operation will have cost the Government at least \$58.81 per passenger carried for an average flight of 133.3 miles as compared with the cost to the passenger of \$7.10," CAB said.

These figures convinced the Board that it would be best to drop the local airline experiment in Florida.

"We were willing to associate with the airline in a joint venture to test the efficacy of local and feeder air service in Florida with full recognition of the limited possibilities of success," the Board wrote. "As we approach the expiration date of our commitment and view the fruits thereof, we are obliged to face the realities. In our judgment, the dictates of a sound development of air transportation militate against continued experimentation with public funds in this area without more positive assurance that the proposed service would be responsive to a vigorous public need and that it could eventually be operated at a reasonable cost to the Government commensurate with the service used."

Florida had told CAB that with more route mileage (1,733 instead of 470) and with Beech 34 aircraft it estimated it would carry 11.6 passengers per mile over the proposed route with mail pay needs of only \$100,000 to \$200,000 annually.

Pointing to Florida's good roads, extensive bus and rail lines, and seasonal traffic changes, the Board said it could not agree with Florida Airways' estimate of new business. It recognized that the company has made some progress in reducing costs and increasing revenues, but held that its prospects of generating more than five passengers per mile of route except on a seasonal basis do not seem favorable.

"And since operation on this basis would probably involve a continuing mail pay obligation in excess of 55c per plane mile we cannot regard an extension of the duration of the existing certificate as in accord with our statutory obligation to foster sound economic conditions in air transportation," CAB concluded.

Fair Trial Wanted. Joseph L. Dyer, Florida Airways' president, says his company will operate as long as it is certificated and will continue efforts to expand its local airline service throughout Florida by every legitimate means. Dyer commented that "The policy change as exemplified in this first decision on extension of a feeder airline is a grave error. This decision is not based on the proven needs of the public nor requirements for national defense. Not only is Florida Airways affected but so are all the other local service airlines throughout the country."

He said his company could not feel that a fair trial of local airline service in Florida could be made in 14 months over only 470 miles of route to 12 cities in north and central Florida.

The airline has available to it various legal means to try and get CAB to reverse its stand, and the next move is probably up to it.

Airlines Vital for Defense But Where's Reserve Plan?

Despite the recognized importance of the U. S. airlines to the national defense, there is at present no organized Air Transport Reserve program, and the question of whether or not there should be one has aroused considerable interest.

Lack of a program has caused criticism from some quarters. Airline employees, chiefly those of the smaller carriers, have been actively interested in forming reserve units. Managements of some of the larger lines are reported to have been holding back.

Nearest thing to the start of a program has been a plan outlined some time ago by officers connected with Air Force reserve matters. Known as the "affiliated" plan, it provided for sponsorship of transport reserve units by the various airlines. In the units would be not only airline personnel, but also persons employed in the vicinity of the airlines' bases. Nothing has been done with this proposal.

From the viewpoint of an Air Transport Association committee which has been working on military problems, the situation is this: the airlines, through ATA, were asked some time ago by Defense Secretary Forrestal to draw up plans covering what they would do in the event of a war. Many questions must be decided—do the airlines retain civilian status, what planes will be operated domestically, what routes will be flown, how will international operations be handled, will there be contract arrangements, etc.

Nothing under the plan has been finally settled yet. It has been submitted to Military Air Transport Service, where it is being actively considered, but numerous airline-military conferences will be necessary before the details are ironed out.

Must Know Before Acting. Officials point out that until the airlines know the exact role they will be expected to play in a war, they cannot very well proceed with a reserve program. Once their role is settled, they are interested in a program. There is reason to believe that MATS feels the same way.

As one ATA official put it, assume that the operations remain essentially civilian, with the airlines assigned definite duties and equipment by the military. The airlines would then know what personnel will be necessary for the job. Assume that Airline A knew that it would be allowed 70% of the ground force it now has. In this case, an air Transport Reserve unit could be sponsored by the airline, with not more than 30% of its present ground force in it. The remainder of the unit would be drawn from persons not working for the airline.

This official summarizes by stating that until the airlines know their role, they can't plan a reserve program. The ATA committee, composed of executives of both large and small airlines, is said to be convinced that if the airlines go at it the other way, with a reserve program before they know their role, they would end up by having a large number of reserve personnel immediately called to active duty—personnel they would need to fulfill whatever mission is finally decided upon.

Training Easy. On the other hand, there are Air Force officers who have other thoughts on the subject. They point out that in World War II airline employees who served in ATC were, for their first year, not as useful as they could have been, because they understood nothing about military procedures. An adequate reserve program would remedy this, they believe, adding that airline employees in transport units would be easy to train because hard-to-get military equipment would not be necessary, and the employees already have some of the necessary know-how.

These officers do not hold the belief that persons in an organized reserve unit would necessarily be called to service faster than reserves who were not in a unit. And, having in the unit per-

sons who did not work for the airline would give the company a partially-trained pool from which to recruit workers to replace those who were called, they state. This contrasts with the view held by those who claim that if war came, the unit would be called as a whole.

As far as the Air Force's reserve program is concerned, there may be changes in the wind that will make it easier for airline employees who want to form units without company sponsorship to do so.

But, from the ATA committee's standpoint, an overall industry Air Transport Reserve program will not be pushed until the airlines' war role is determined.

War Surplus Gamble

The final disposition of some \$600,000,000 in government surplus aircraft engines, parts and other components by next Feb. 28 when the War Assets Administration goes out of business is causing some concern in industry circles, particularly where future Douglas DC-3 operations are concerned.

WAA this month was negotiating with its 42 disposal agents for the outright sale of a large part of the existing surplus. It hoped to cut the \$600,000,000 figure to \$200,000,000 by Dec. 31. But if it failed to achieve this goal, the big question was what might happen to engines, spares and parts that might be needed in keeping planes flying all around the world, one and two years hence.

Contract agents of WAA, it was stated, were being offered the surplus on what



36 Trips to Sun—C. R. Smith, board chairman of American Airlines, accepted National Safety Council's billion mile safety award plaque for 1947 during recent ceremony in New York. The airline was honored for flying 1,502,499,000 scheduled passenger miles between Dec. 28, 1946, and end of 1947 without fatality to passengers or crew. Distance was equivalent to 36 trips to the sun, or 13,861 trips to the moon. Left to right: Ralph S. Damon, AA president; Smith; L. G. Fritz, AA v.p.-operations; John S. Cuthbert, who made presentation for NSC.

the government considered to be liberal terms, both as to sale price and terms of settlement. Whether the WAA agents are able to finance considerable inventories covering a wide variety of spares and parts would determine the amount of surplus that would be scrapped before the end of next February.

Some Welcome End. Aircraft and engine manufacturers involved, especially those concerned with servicing thousands of DC-3's, appear eager for the day when aircraft surpluses will be disposed of definitely. The Douglas Aircraft Co. has considerable business in airframe replacement parts and states it is prepared to keep producing as long as a DC-3 flies anywhere in the world. Many of the airlines have been dealing directly with the Douglas company rather than through WAA surplus agents for airframe components.

As part of its servicing program for DC-3's, the Douglas company has a large depot at Brussels for replacement of parts on DC-3 and C-47 aircraft used in Europe and Africa. Some 2,000 persons are employed in its production, distribution and servicing program, it was stated by a company spokesman.

Likewise Pratt and Whitney Aircraft Division of United Aircraft Corp., is in the business of producing the S1C3-G engine for the DC-3 and C-47—the commercial version of the R-1830-92 military model. P & W spokesmen stated the company has the tools and all the production facilities to produce the DC-3 engine during the foreseeable future.

But it was apparent that new P & W orders for the S1C3-G models would be influenced considerably by what happens to surplus R-1830 models. The difference to the buyer of surplus engines is obvious. He pays approximately \$700 as compared to an original acquisition cost of from \$8,000 to \$10,000.

In an attempt to convince WAA officials that there will be a continuing market for surplus DC-3 engines, one large airline outlined its future needs. WAA, it was said, sought this information generally from the ultimate market as one way of meeting statements of its agents about the pessimistic outlook for engine sales in the future.

LABOR

C&S Gives ACCOA Raise

A new contract signed between Chicago and Southern Air Lines and the Air Carrier Communication Operators Association gives a \$25 a month across the board increase to all C&S employees in four major classifications: teletype, radiotelephone, radio-telegraph, and lead radio operators. New top bracket for radio operators is \$290 per month, with extra pay for supervisory duties. Average increase for all C&S communication employees is 12.75%.

PAA Offers Tourist Fare To Throttle P.R. Irregulars

Pan American Airways hoped it had found the answer to the competition from irregular air carriers who at fares of \$60 (for bucket seats) and \$72.50 (for reclining seats) have been skimming off about 40% of the passenger business between New York and San Juan, Puerto Rico.

A "tourist class" service to be inaugurated Sept. 24 by Pan American with a fare of about 4.6c per mile will offer one-way passage from New York to San Juan for \$75, or \$58 below the previous fare of \$133 for the 1,612-mile flight. The round-trip fare of \$150 figured out to be \$30 below the previous round-trip excursion fare of \$180. The tourist class flights will supplement PAA's regular Clipper service which remains unchanged.

These rates were lower than any long-distance fares quoted by any scheduled domestic or international airlines, but Pan Am said it could offer the bargain fares with a reasonable expectation of showing a profit on them by eliminating meals and a few other "extras" and by increasing the capacity of the DC-4's used in the service from 52 to 63 seats.

This would mean a little less space for passengers than is normally available on PAA Clippers, but Pan American's 63-passenger DC-4's undoubtedly would be considerably more comfortable than the planes of some of the irregular carriers operating between the U. S. and the Puerto Rican capital. Some of those carriers have been known to pack 40 to 50 Puerto Ricans aboard a DC-3, designed to carry 21 passengers in normal airline operations, and to load a DC-4 with as many as 85 passengers out of San Juan.

Besides offering more comfort and faster schedules, Pan American could be expected to cash in on its known high standards of safety and dependability, as contrasted to the "X" factors in the operations of some of the irregulars.

Others Will Watch. "The tourist service has been the subject of many discussions with the Puerto Rican government," said Willis G. Lipscomb, PAA v.p.-traffic and sales in announcing the new service. "We decided that steps were necessary to make it possible for more people to fly on a scheduled service between San Juan and New York. In devising this new tourist service, we are applying a new concept to international air transport and we hope to tap a whole new segment of the traffic potential.

"Results should be of interest to international operators everywhere," he added.

The results also will be watched with interest by domestic airlines and by the CAB, in the light of recent discussions regarding coach-type service and elimination of free meals aloft as possible means of cutting airline expenses and generating additional traffic.

Fares Reach 6c Level

The confused domestic airline fare muddle showed signs of settling at a general 6c per mile level last week. But there was still disagreement on major points among the transcontinental airlines, despite two CAB conferences aimed at achieving harmony.

United Air Lines and TWA each moved basic fares up 10% on Sept. 1, maintained a surcharge for deluxe services (DC-6's and Constellations) and provided a 5% discount on round-trip tickets. Eastern Air Lines was to go along with this on Sept. 12.

But American Airlines was standing firm against both the extra-fares and round-trip discounts (see story below). It boosted its DC-3, DC-4, and Convair fares to the 6c level on Sept. 1, thereby equalizing fares for all of its equipment.

Northwest Airlines and Western-Inland also moved their fares to the 6c level on Sept. 1, with 5% discounts on round-trips. Northwest eliminated the 5% penalty refunds which it has been giving when flights were more than 30 minutes late.

Six other lines, Delta, Mid-Continent, Chicago and Southern, Continental, Northeast, and Capital, were to boost their fares to the general industry level on Sept. 12, also with 5% round-trip discounts.

In some instances the latest round of increases was considerably less than 10%, since there had been variations in previous basic fares among the carriers.

Still unheard from were Braniff, National, and Colonial.

No Extra-Fare, No Discount

There were some who thought C. R. Smith, chairman of the board of American Airlines, eventually would yield and join other major carriers in raising passenger fares above the 6c level, as suggested at the CAB-airline fare conference last month, but Smith felt very strongly about the matter and was convinced he was on sound ground.

In a letter to Joseph J. O'Connell, Jr., chairman of the CAB, Smith explained his position in considerable detail and suggested that the industry had failed to take full account of three serious problems in deciding on another fare increase this fall. These were:

1. Declining volume of first class travel,



Why AMERICAN has *not* raised its DC-6 fares

On September 15, 1948, American Airlines announced that it had decided to keep its DC-6 fares at the present level. This decision was made after a long and careful study of the situation. American Airlines has always been known for its low fares, and it is now more than ever determined to keep its fares as low as possible. The price of air transportation must be kept within the reach of the average customer.

AMERICAN AIRLINES

WHEN HIGHER FARES went into effect Sept. 1, American Airlines used newspaper campaign to tell public why it was holding the line on its DC-6's: "the price of air transportation must be kept within the reach of the average customer."

proved by all the statistics on the subject of total travel.

2. Customer resistance to the price of air transportation at the prices that prevailed this summer, as shown by low load factors.

3. The approaching winter season, when load factors will have a seasonal drop, and when the airlines will require ability to make additional sales rather than fewer.

"We have weighed these factors very carefully," the letter continued, "and can come only to the conclusion that an increase in the 6c fare level now would be a very grave mistake. Hence we do not intend to request any increase above that level."

Pertinent quotations from Smith's letter follow:

"Air fares can and will, by constant increase, reach an area of diminishing return. Each succeeding price increase brings us closer to that area. Any increase in price at this time will be the third within a year. This increase, therefore, has greater probability than any preceding it to bring us surely into the area of diminishing return."

"If we raise fares substantially and if customer resistance is sufficient to diminish business volume and income, our judgment is proved at fault . . . we have reached an economic area in which the carriers cannot afford errors of judgment which may be beyond their ability to repair."

"Heavy taxation and rising cost of purchases have diminished the ability of the average man to save. Witness the lack of savings and capital which

result in a continuing increase in installment purchasing, and a large part of it for automobiles, radio and household equipment. Can we expect the average man, with insufficient capital for the automobile, to prefer paying for a journey by air? Certainly not unless it be either a business requirement or occasioned by emergency."

Pointing to high food prices and shortages in certain food lines, Smith continued: "There is no comparable shortage of production of air transportation and air transportation will not successfully compete with the requirement for food if we enter that area of comparison and necessity of choice."

"We do not require further fare increases to price ourselves out of the purchase range of a substantial group of people; already, at present prices, we have priced our product beyond their ability to purchase . . . No one should undertake a sales and pricing program, until he has at least endeavored to find the depth and worth of his potential market; certainly he should know where he will seek potential customers . . . our problem is to evaluate the present and reasonably foreseeable force of inflation in the United States and to price our product, based on that judgment, in such terms as will presently bring us greatest income and provide best opportunity for profitable operation."

No Rail Comparison. The letter points out that unlike rail transportation, in which extra fare services form a small part of the total transportation produced, American finds that its DC-6 operations are a major part of its total service. Citing July passenger mileages,

Smith said 72,275,681 passenger miles were flown in DC-6's; 12,560,085 in Convairs; 29,217,037 in DC-4's; and 13,153,745 in DC-3's. Total passenger miles provided in extra-fare equipment by United, TWA and Eastern for June were cited in the letter at 45%, 43% and 43% respectively.

From this, Smith concluded: "Thus there is not now any such cleavage between the DC-6 service and the service with other equipment as to justify extra fare operation. It cannot be justified in the mind of the ordinary traveler, nor can it be justified according to any of the principles applied to support extra fare operations by rail."

Smith said American Airlines regards the round trip discount as "an outmoded system of selling, one originally sponsored by the rail lines and adopted by the airlines foolishly without mature consideration of the problem. If we sell a one-way ticket for \$100 and permit a discount of 10% for round trip, the cost of the journey is \$180. If we are willing to sell two tickets, to the same person, for \$180, we are in favor of selling one to the same person for \$90, for that permits us to advertise a lower fare level . . . We are in favor of the railroads' maintaining their present practice, for it gives us sales and advertising advantage."

Same Goal: 2 Approaches

When passenger load factors are too low, as they have been on many airlines recently, there are two means open for boosting them: one way is to fly fewer seat miles, the other is to sell more passenger miles of traffic. This month, each of the two ways was to be given a trial by a major airline in an effort to build up load factors during the early part of the week.

American Airlines proposed to meet its problem of too many empty seats by instituting a "first-of-the-week family fare plan" under which a husband purchasing a full-fare ticket could take along his wife and any children under 21 years of age at half-fare rates, and a mother or father purchasing a full-fare ticket could take all children 21 or under with them at half-fare.

This plan would be in effect on Mondays, Tuesdays and Wednesdays, when airline load factors historically are lower than on other days of the week.

United Air Lines decided to approach the same problem from the other end; that is, by reducing the number of seat miles flown on slim traffic days.

On Sept. 8, United began operating two separate schedule patterns, one a four-day pattern, the other a seven-day pattern.

The four-day pattern initially operated only on Thursday, Friday, Saturday and Sunday, providing the seats regularly needed to carry heavy week end traffic, but eliminating certain trips on the low load factor days of Monday, Tuesday and Wednesday. On Sept.



NOW...

UNITED OFFERS A

5% DISCOUNT ON

ROUND TRIPS!

(Effective Sept. 1)

For the first time since 1943, United Air Lines offers a reduction on round trip air tickets over its entire mainland system. Now you can enjoy the convenience and savings of round trip tickets. And remember, United fares include meals. More than ever, it pays to fly United.

UNITED AIR LINES

the Main Line Airways

takes you nearly everywhere

UNITED AIR LINES featured fact that for first time since 1943, it was offering a reduction on round-trip tickets.

MANAGEMENT

26, the pattern was to be cut to Friday, Saturdays and Sundays.

This plan, by eliminating several hundred thousand seat miles of operations on the first three days of the week, was expected to help United's average passenger load factors, and save considerably on direct costs.

The seven-day pattern is basically the same as the one previously in effect, but was strengthened by replacement of certain DC-4 flights with DC-6's, as well as the addition of new coast-to-coast and Pacific Coast flights.

New coast-to-coast flights include a New York-Cleveland-Milwaukee-Denver-Los Angeles DC-6 flight, and a four-days-a-week New York-Chicago-Denver-San Francisco DC-6 flight.

Chesapeake Now Operating

Just 27 days before its temporary certificate was due to expire, Chesapeake Airways, Inc., began operations Sept. 3 between Washington and Salisbury, via Easton, Md., with initial service of two round-trips daily except Sunday.

Sunday schedule is one round-trip leaving Washington at 4:40 p.m., while weekday departures from Washington are at 8:10 a.m. and 4:40 p.m. Limousine service is available from the Salisbury airport to the resort points of Rehoboth, Del., and Ocean City, Md.

Chesapeake is using a 28-passenger DC-3, with a 21-passenger DC-3 as a standby. Step-doors simplify ramp procedures. Line maintenance is done at the company's base at Salisbury, while Capital Airlines at Washington is handling major maintenance work for the newly certificated line.

Raymond Fischer is general manager of Chesapeake, which was operating an intrastate air service between Baltimore and Salisbury, via Easton, at the time the Civil Aeronautics Board awarded it a temporary certificate for a local summer service to the same points from Washington. Certificate was granted in late June, but various technicalities prevented Chesapeake from implementing it until Labor Day week end. It is due to expire Oct. 1.

Irregular Carriers Organize

Feeling that their stake in air transportation had become large enough that they needed to band themselves together to promote their mutual interests, several large non-certificated irregular air carriers announced in late August the formation of a new organization—The Independent Air Carrier Association.

R. R. Hart, president of Viking Airlines, is president of the new group, which has the announced purpose of getting legislation through Congress which will protect current operations of the irregular carriers and insure them the protection of the law in the future development of their activities.

Aviación

Por ARIAS BERNAL



—Ya sabes, mitad y mitad

Mexico Looks at Uncle Sam

Here's how Mexico City's 'Excelsior' viewed the United States' recent unsuccessful effort to work out bilateral air transport agreement. The pungent punch-line line translated says: "You know, half and half."

Other officers elected to serve until Jan. 1, are: Richard Olivere, of New England Air Express, treasurer; Herbert Sussman, of Quaker City Airways, secretary; Orvis Nelson, president of Transocean Air Lines, vice-president—western division; and R. Paul Weesner, of Nationwide Air Transport Service, Inc., vice-president—eastern division.

Harry Meixell, executive director of the National Aviation Trades Association, will run the organization's national office in the Dupont Circle Building, 1346 Connecticut Ave., N.W., Washington 6, D. C., with the assistance of Joseph J. Mitchener, Jr., formerly with the Feeder Airlines Association.

A nine-point program adopted by the IACC centers around Congressional action aimed to give the irregular carriers undisputed legal status. Other objectives include representation before CAB on matters affecting members, issuance of weekly bulletins, development of good public relations, filing of tariffs, and a joint insurance program for the benefit of members.

CAB CALENDAR

Sept. 27—Hearing in Free and Reduced Rate Transportation Case. (Docket 2737 et al.) Postponed from Sept. 13. Place and hour to be announced. Examiner Barron Fredricks.

Sept. 27—Hearing on application of Challenger Airlines Co. for extension of terms of temporary certificate for Route 74 and for addition of new intermediate points. (Docket 3369 et al.) Examiner Herbert K. Bryan.

Sept. 29—Oral argument in TACA, S. A., Foreign Air Carrier Permit Renewal Case. (Docket 3016). 10 a.m., e.s.t., Room 5042 Commerce Building. Postponed from Sept. 2.

Oct. 4—Hearing on route consolidation proposals of Transcontinental & Western Air. (Docket 2581 et al.) Tentative.

Oct. 4—Hearing in Capital Airlines Mail Rate Case. (Docket 484). Postponed from Aug. 30.

Oct. 4—Hearing on application of Eastern Air Lines for removal of restriction in certificates for Routes 5 and 6 which now prohibits service to Winston-Salem and Greensboro/High Point on the same flight. (Docket 3088). Tentative. Examiner Ralph L. Wiser. Place and hour to be announced.

Aviation Calendar

Sept. 14-16—Hearings by Indiana Aeronautics Commission on state control of air commerce, Statehouse, Indianapolis.

Sept. 17—Air Force Day dinner, Hotel Statler, Washington.

Sept. 18—Nationwide observance of Air Force Day.

Sept. 19-21—Northwest Aviation Planning Council 12th international convention, Vancouver, B. C.

Sept. 24-26—Air Force Association convention, Hotel Commodore, New York.

Oct. 6-8—National Association of State Aviation Officials annual convention, Copley Plaza, Boston.

Oct. 6-9—SAE National Aeronautic Meeting and Aircraft Engineering Display, Biltmore Hotel, L. A.

Oct. 14-16—Air Line Dispatchers Assn. convention, Edgewater Beach Hotel, Chicago.

Oct. 17-21—National Aviation Clinic, Detroit.

Oct. 18-23—American Society of Travel Agents convention, Savannah, Ga.

Oct. 18—Personal Aircraft Council meeting, Detroit.

Oct. 20-21—Air Transport Section, National Safety Council, Hotel Stevens, Chicago.

Oct. 22-23—Fourth annual Arizona Aviation Conference, Prescott.

Oct. 25-26—Third Annual Indiana Aviation Conference, Purdue University, Lafayette, Ind. (Sponsored by Purdue School of Aeronautics, Indiana Aviation Trades Association, Indiana Aeronautics Commission.)

Nov. 15-17—National Aviation Trades Association, annual meeting, Hotel Allerton, Cleveland, with joint meetings and trade show with ADMA.

Nov. 15-17—Aviation Distributors and Manufacturers Assn., annual meeting, Hotel Statler, Cleveland.

Nov. 16-18—National Association of Travel Officials annual convention, Miami Beach, Florida.

Dec. 2-5—Fourth annual International Aviation Celebration, El Paso.

Dec. 17—Annual Wright Brothers Lecture, Institute of the Aeronautical Sciences, at U. S. Chamber of Commerce, Washington, D. C.

International

Sept. 14-18—IATA Fourth Annual General Meeting, Brussels.

Sept. 14-18—ICAO Informal Aerodrome Lighting Meeting, London.

Sept. 20—IATA Executive Committee, Brussels.

Sept. 24—ICAO Legal Committee meets on new insurance convention, Lisbon.

Nov. 9—ICAO Operations Division, Montreal.

Nov. 16—ICAO Airworthiness Division, Montreal.

Nov. 23—ICAO Southeast Asia Regional Air Navigation meeting, New Delhi.

Brickbats & Bouquets for Air Races

As was to be expected, there were good things and bad things about the National Air Races at Cleveland over the Labor Day weekend.

In general, it can be said that it was a better show than the 1947 edition. The Air Force and Navy demonstrations clicked and a number of the other acts were crowd-pleasers.

It was evident, as it has been at past air shows, that the Air Force and Navy never heard of unification when it comes to putting on demonstrations. Although they were trying to outdo each other, our opinion was that they were pretty even this year. The AF, of course, had a tremendous attraction in its North American F-86, which unofficially broke the world's speed record with an average of 669.48 mph. The record was not official because the timers did not clock all of the runs. The sight of the F-86 streaking across the field drew ooh's and aah's from the crowd. It was a thrill for both novice and expert.

Also impressive were the passes made over the field by more than a score of B-29's in formation. And following these came the huge six-engined Consolidated Vultee B-36, with a Republic F-84 flying just under the fuselage. Another high spot of the AF program was the act put on by two reserve pilots in AT-6's. Many persons said they had never seen two planes fly closer together.

Both jets and other planes of the Navy put on a good show. The Blue Angels remain hard to beat as an acrobatic team. And, in a smooth bit of strategy, the Navy slipped in Arthur Godfrey as its guest announcer at one performance. Worthy of mention was the timing of the Navy show. There were few dead spots.

This year the Goodyear midget race was in full view of the stands—a great improvement over last year when the planes were out of sight part of the time. The Goodyear race is one of the most popular events at the races.

There were others things, though, that were not pleasing to the spectators. There were complaints galore about the public address system. It wasn't adequate for a crowd one-quarter as large. Consequently a large number of the old customers had only a vague idea of what was going on.

The man in the stands also has a great deal of trouble keeping up with the races, even assuming a more adequate public address system. He sees the planes go around the course, but what with some dropping out and others



BEVERLY HOWARD, president, Hawthorne Flying Service, Charleston, S. C., with Beech Bonanza flown in special acrobatic maneuvers at National Air Races in Cleveland, Sept. 4-6. The plane came off production line on June 16 and had been used approximately 100 hours in company transportation.

getting lapped, he has a tough time keeping up with the order of finish. One suggestion is that a large board be erected, similar to those used at race tracks. On it could be posted order of finish, pilot's name, type of plane and speed. We think it would make a big hit.

One thing should definitely be corrected at the races. Several of the acts were, in our opinion, too close to the stands. If two planes had collided, one would almost certainly have ended up among the spectators. There was also the makings of a bad situation when a flock of AF planes just missed ending up in the middle of the Sohio race.

The airlines were having their usual troubles, and probably lost some friends among their passengers. Trips were stacked up and others were delayed getting off the ground. The air races are not laid out to add to an airline pilot's peace of mind.

As usual, the races provided a meeting place for the people in aviation. There were the usual all-night parties and songfests (the following notice appeared in the press room at the Carter Hotel: "Anyone annoyed by the loud singing until 4:30 this morning can retaliate by calling George Haddaway at 15-minute intervals throughout the day"). Most

of the old-timers come to Cleveland not for the races but to see old friends. One well-known figure, who has been among those present for years, tried something new this year. He went to the races. And he was so impressed he said he'd try it again some time.

Maybe that's a good comment on the quality of the events this year.

Just how safe are personal type aircraft regarding built-in strength to withstand the stresses and strains of steep climbs and banks, inverted flight and other such maneuvers? Beech Aircraft Corp. provided a convincing answer at the races.

Flying a standard production model Beechcraft Bonanza, Beverly (Bevo) Howard, president of the Hawthorne Flying Service of Charleston, S. C., and 1946-1947 International Aerobatics Champion, gave 10-minute demonstrations each day of the show, performing the following maneuvers: (1) a series of slow rolls, (2) one very slow roll, (3) two inverted slow rolls, (4) eight-point roll followed by a slow roll, (5) a loop, (6) a Cuban-Eight followed by slow roll, (7) inverted flight, (8) Immelman followed by snap roll, and (9) short landing in front of the stands.

The Bonanza used is licensed as a four-place plane in the utility category and is not licensed for all the aerobatics listed above, but CAA gave Howard special permission to put the plane through the paces. The show was planned by Beech as "a definite demonstration of the strength and performance of the Bonanza."

For the record, winners of racing events at Cleveland follow: Thompson Trophy Race: 20 laps, 300 miles. Winner—A. L. Johnson, in a P-51. Time, 46:54.21. Speed 383.767. Goodyear Trophy Race for midget planes: Eight heats, each of 8 laps over two-mile closed course. Winner—H. R. Salmon, flying a Cosmic Wind. Time 8:29.41. Speed 169.608. Goodyear Consolidation: K. R. Townsend, winner, flying a Special. Speed 142.447. Bendix Trophy: Paul Mantz, winner, flying a P-51. Speed 447.984. Time 4:33-48.7. J-Division Bendix: Ens. F. E. Brown, winner, in an FJ-1, with avg. speed of 489.526 and time of 4-10-34.4. Tinnerman International Trophy: 15-mile course, 7 laps. Winner, Bruce E. Raymond. P-51. Speed of 362.246. Kendall Trophy Race for women pilots. 15-mile course, 5 laps. Grace Harris, winner, in an AT-6, speed of 234.962. Sohio Handicap Trophy Race, 7 laps, 105 miles. Winner, R. I. Tucker, in a P-63. Speed 320.220.

ERIC BRAMLEY.

Seaplane in Comeback

On Saturday, Aug. 28, the largest flying boat in operational service, the Navy's Martin JRM-2 Caroline Mars, landed in Burnham Harbor, Chicago, after a 4,748-mile non-stop flight from Kechi Lagoon, Honolulu, T. H. The 24-hour and 9-minute flight established a new unofficial distance record for flying boats, since the previous record for hull-type aircraft was a 4,375-mile flight from Patuxent River, Md. to Natal, Brazil, made during the war.

The Mars took off from Honolulu at gross weight of 165,000 pounds, carrying crew of 17 and 25 passengers, and total payload of 14,049 pounds. Average ground speed for the flight was 193 mph against an average headwind of seven mph. We were fortunate enough to be part of the passenger load.

The flight, although widely hailed by the daily press, is not too significant. It might be said, in defense of the Navy, that it was not planned as a publicity stunt. It was an actual shake-down flight of the JRM-2, a new airplane on which fuel consumption and long range performance data had to be checked. But actually, the flight proved nothing. True, it was a new "record," but only because no one had ever bothered to beat the former one. The Caroline Mars' sister ships, the four JRM-1's in service, are all capable of greater range than the Honolulu-Chicago flight. The JRM-2 itself has a maximum range of 6500 miles.

Place in Sun. The flight did, however, accomplish something; it brought back into the public eye the somewhat dormant interest in the seaplane. It is not our purpose here to revive the seaplane vs. land-plane controversy. Both have their advantages; the seaplane, for instance, obviates the necessity for heavily-stressed, extremely expensive airfields, which the super-land-planes now in development will require. In addition, the fact that it carries no weighty landing gear permits a greater payload for the same gross weight. The land-plane has the advantage in speed.

But from the military point of view the seaplane definitely does have a place in the sun. In an emergency, with little time to build the landing strips required for military land transports, the seaplane could provide the necessary logistic support to advance areas where water landings are possible. The importance of this can readily be realized by considering the possibility of another Pacific war.

The casual observer has come to regard the seaplane, if he bothers to regard it at all, as strictly a transport airplane, with absolutely no tactical potentiality. We were somewhat surprised, therefore, to hear of some of



Largest Flying Boat—The Navy's largest flying boat and the largest in operational service anywhere—the Martin JRM-2 Caroline Mars. The JRM-2 differs from its sister ships, the earlier JRM-1's, in the installation of Pratt and Whitney R-4360 engines, providing an extra 600 horsepower per engine for take-off and permitting additional speed and payload. Military uses suggested for flying boats, other than cargo, are bombers, parasite-plane carriers and flying LST's.

the proposed uses of seaplanes. For instance, what about a long-range seaplane bomber? Sounds impracticable to the ear, but proponents of the seaplane who have spent a lot of time in their development have worked out some highly practicable designs. Their flying boat bomber, for instance, would not be the bulky, 200-mph seaplane in service today.

It is quite possible, these seaplane champions state, to design a sleek, streamlined hull-type bomber capable of speeds of more than 450 mph. Such a design would be powered by turbo-prop engines and would be capable of extreme range by employing the refueling principle, except that it would refuel in friendly or isolated waters and a submarine, rather than another plane, would serve as tanker. Fantastic? Not any more so than the Air Force's in-flight refueling. The Navy already has a refueling submarine in development.

Host for Parasite. Carrying the development of the seaplane a little farther, how about parasite hull-planes with a seaplane carrier? Such a proposal has already been worked up. The carrier would be the same 450-mph turbo-prop-powered streamlined type mentioned above. It could carry four parasites, two on each deck, and would be equipped with cranes to lower them to the water. The parasites could be employed as attack bombers or as long range fighter escort.

The Navy already has a hull-type fighter in development. If this proposal sounds far-fetched, is it any more far fetched than tiny F-85 parasites dropping from the bomb-bays of B-36's and returning to the bombers in flight, according to the Air Force plan? It

would seem, even after careful thought on the subject, that launching and retrieving the parasites on water would be the simpler method of the two.

Then there is the possibility of the flying LST, a giant flying boat with a cargo ramp in its nose, which could taxi close to shore, drop its ramp, and discharge its cargo of tanks, artillery or other ground forces equipment. The Navy is seriously considering this design.

Whether these designs ever pass the dream stage is problematical. But, at any rate, we're convinced that the seaplane is here permanently.

Navy's Atom Ambition

A very timely news story in the New York Herald Tribune has thrown top Navy airmen into a dither. The H-T uncovered the fact that the Navy has asked manufacturers for bids on a carrier-based atom bomber to be used as the attack component of the 65,000-ton super-carrier now in construction. The Navy was forced to confirm the truth of the story in essence but said it was regrettable that the news had leaked.

It certainly was regrettable, for the story came at a time when the old "who's who in strategic bombing" argument was about to drop into oblivion.

But if the Navy is going right ahead with plans for carrier-based atom bombers, apparently it still has plans for strategic utilization of its air arm. You don't build atom-carrying planes of B-29 size to chase submarines. It looks as though the old argument is due for another go-round.

JAMES J. HAGGERTY, JR.

From High-Speed Bombers to High-Speed Transports MARTIN LEADS THE WAY INTO THE FUTURE!



YESTERDAY: The famous Martin B-10 bomber, faster by 100 m.p.h. than any other bomber of its day and speedier than most pursuit ships, made obsolete nearly all the world's military aircraft; won the 1932 Collier Trophy for Glenn L. Martin.



TODAY: The Martin 2-O-2 as a military transport can carry 61 military personnel or more than 15,000 pounds of military cargo—over twice the capacity of twin-engine equipment used in World War II and still in service. And the 2-O-2 cruises at speeds 100 m.p.h. faster than the World War II planes it replaces . . . yet operates from the same short runways, small airports.

Tomorrow

Martin engineers are constantly at work harnessing higher and higher speeds to the transport and combat needs of our Military Services. In the days to come, look to Martin for rotary wing aircraft and other swiftly developing fields.

The Glenn L. Martin Co., Baltimore 3, Md.



Martin

AIRCRAFT

Builders of Dependable Aircraft Since 1909



"LAK BAIT," Devan Francis' new book, is the thrilling story of the heroic men who flew and serviced Martin B-26 Marauders in bomber strikes from the Southwest Pacific to the gates of Berlin. We are proud to be mentioned with these gallant men.

SEPTEMBER 15, 1948

PERSONNEL

ADMINISTRATIVE

Buell A. Patterson resigned his position as director of public relations with American Airlines to join U. S. News & World Report as director of the public relations division, effective Sept. 7. In aviation for 10 years, he was with Curtiss-Wright before going with AA.

Leo H. Dwerlkotte, former executive vice president of Western Air Lines, is acting as consultant to Arizona Airways and is in Phoenix assisting the newly certificated feeder line in setting up its scheduled service.

Fernando de la Hoz has been appointed North American representative for FAMA, the Argentine airline, with temporary offices at 110 W. 42d St., N. Y. C.

H. Frank Gump, acting director of industrial relations for TWA-International since July 1, became director on Sept. 1, and **R. Paul Day** took over on the same date as industrial relations manager at New Castle, having formerly been acting director.

Charles E. Ruud, manager of job evaluation in the TWA system staff office, has gone to Paris to join the staff of **A. B. Stofor**, manager of Wage and Salary-International.

Gariand E. Braden, senior tax auditor for TWA, was promoted to the newly created position of manager of overseas taxes and was transferred to the Paris office.

OPERATIONS-MAINTENANCE

Max Hutchinson, formerly assistant station manager for National Airlines at Norfolk, was named station manager at Baltimore, when the company inaugurated service there Sept. 1. **W. E. Golden** moved from assistant station manager at Newark to station manager at Richmond, Va., on the same date, and **D. E. Roberts** was shifted from temporary duty at Pensacola to become station manager at Panama City.

Robert C. Loomis has become flight test and research director for Consolidated Vultee Aircraft Corp., succeeding **R. R. Rogers**, resigned. Loomis is a former Navy pilot and since 1940 has been associated with TWA. He resigned recently as the airline's director of maintenance and overhaul.

TRAFFIC & SALES

D. O. Kerkow, for the past eight months chief cargo agent for National at Miami, has been promoted to cargo manager. He had served with Eastern Air Lines and Pan American before joining National two years ago.

Robert Hodge has been promoted to reservations control manager for Delta



UAL's Youngest 'Old' Pilot—

Celebrating his 20th anniversary as a United Air Lines pilot, Capt. Joseph R. Smith at 38 is one of youngest pilots in world to have chalked up 19,000 hours in air, representing more than 3,000,000 miles of flying. Based at Seattle, he is flying DC-6's between that city and Los Angeles.

Air Lines at Chicago, effective Oct. 1, with the following personnel assigned to his office with the title of reservations control supervisors: **Robert L. Gibson**, now chief reservations supervisor, Atlanta; **William R. Fetner**, chief reservations supervisor, Charleston; **David Garrett**, now temporarily assigned to operations at Chattanooga; and **Joe Hannum**, who is joining Delta after eight years with EAL.

Ruth Haviland, formerly director of United Air Lines' women's traffic division in New York, has been named promotional advertising manager for UAL in the metropolitan area, succeeding **George Sorgatz**, resigned.

Charles S. Fisher, Idaho district sales manager for Western Air Lines since July, 1947, has been named Pacific Northwest manager of interline and agency affairs, with headquarters in Seattle.

Otis Hardy, formerly assistant system reservations manager for Delta, has been promoted to reservations manager-western division, and **Albert Rhett**, formerly reservations manager at Miami, has been made reservations manager for Delta's eastern division.

O. M. Foxworth, Jr., formerly manager of tariffs and schedules for National Airlines, has been named manager of express and mail. He was with Railway Express Agency before joining NAL in 1944.

Don Hunter, who resigned as assistant sales promotion manager for TWA last October to join a West Coast automobile agency, has returned to TWA as sales promotion manager for the eastern region, with headquarters in New York.

James W. Hindery has been promoted from reservations supervisor to chief reservations supervisor for DAL at Chicago. **Lester Billheimer**, chief reservations supervisor at Knoxville, has been transferred to Miami in the same capacity. His job at Knoxville was taken over by **James L. McMurray**, formerly reservations supervisor there.

Vincent J. Schreiber has been promoted from supervisor in KLM's airport freight office in New York to cargo sales representative for the line's North American Division.

William Brussard, district traffic and sales manager for UAL at Reno since 1941, has been given a six-month leave of absence to assume the duties of manager and executive secretary of the Reno Chamber of Commerce. **George Galvin**, from the San Francisco office of United, will assume Brussard's duties during his absence.

John R. Larsen, formerly traffic and sales representative for EAL at Charlotte, has been promoted to traffic and sales manager for the Greensboro-High Point district.

Sigmund Janas, Jr., has taken over the duties of general traffic manager of Colonial Airlines, in addition to his duties as vice president.

Charles L. McLain has been promoted from reservations agent to reservations supervisor for DAL in Charleston, S. C.

James A. Varnado has been promoted from traffic agent for Delta in Jackson, Miss., to traffic representative in charge in Baton Rouge.

Eugene T. Thummel, former assistant city manager for Pioneer in Midland-Odessa, has been named district traffic manager in the Amarillo-Lubbock-Plainview area.

Walter F. Burkhead has become city sales manager for Mid-Continent at Rochester, Minn. He formerly was a sales representative in Minneapolis-St. Paul.

Glenn W. Antrim at Tulsa, **Duane F. Bollinger** at Omaha, **Jack H. Botkin** at Des Moines, **William A. Turner** at New Orleans, **Robert P. Wright** at Kansas City, and **Earl White, Jr.**, at Houston, have been named chief sales agents for Mid-Continent.

Ernest Wilbanks, formerly salesman in San Antonio for Continental, has taken over as acting district traffic and sales manager. His sales position has been assumed by **Tom Farrington**, formerly with Braniff in Topeka.

Hans Groenhoff, fashion color photographer and wartime assignment photographer with the U. S. Air Forces, has been appointed director of Colonial Airlines' picture service bureau.

Blanche Noyes, chief of the airmarking section of the CAA, was elected national president of the 99's (International Women Pilots) at the annual convention in Kansas City.

Everett H. Schroeder, formerly service manager of the Atlantic Division of Pacific Airmotive Corp. and before that in charge of commercial customer relations for the Propeller Division of Curtiss-Wright Corp., has been appointed vice president in charge of service for Sailors Aircraft Service, Inc.

Kent Named Advertising Director of American Aviation

Appointment of Stephen R. Kent, 31, as director of advertising for American Aviation Publications effective Oct. 1 has been announced by Wayne W. Parrish, editor and publisher.

Kent has been assistant sales manager for Scintilla Magneto Division of Bendix Aviation Corp. since 1945. Prior to that for four years he was sales engineer for Wright Aeronautical Corp. He was graduated in 1940 from Columbia University where he was a Pulitzer prize scholar and rowed on the crew. He was a development engineer for Caterpillar Tractor Co. for one year.

While with Wright Aeronautical, Kent spent time in 1945 on Guam as special engineering adviser to the 20th Air Force with the assimilated rank of Colonel. He has worked extensively with all aircraft companies and airlines on engine sales program and performance and airline operation studies. He is a member of the Society of Automotive Engineers and other organizations, and was a member of the crew of the B-29 Dreamboat when it broke three national and international speed records in two days in 1945.

He will handle all advertising sales for AMERICAN AVIATION MAGAZINE, AMERICAN AVIATION DIRECTORY, and OFFICIAL AIRLINE GUIDE.

Riiser-Larsen Heads DNL

Maj. Gen. Hjalmar Riiser-Larsen who has taken over as managing director of Norwegian Air Lines (DNL) is the new executive head of the company, according to a clarifying statement from Scandinavian Airlines System office in New York. AMERICAN AVIATION for Aug. 17 announcing Riiser-Larsen's appointment as managing director, indicated that the presidency had not been filled. Actually the managing director title used by DNL is equivalent to the presidency of U. S. companies. Riiser-Larsen succeeds Ernst Balchen and Per M. Backe who had resigned earlier as DNL co-presidents to open the way for selection of a new executive head. Balchen is expected to return to active service with U. S. Air Force in October. Whether Backe will remain with the company has not been disclosed.

Airline Commentary

By ERIC BRAMLEY

WE SPENT the Labor Day weekend at the National Air Races at Cleveland . . . Saw a lot of people and had a lot of fun . . . Among those present, to mention just a few, were: Johnny Alison, Assistant Secretary of Commerce for Aeronautics; CAA Administrator Del Rentzel, with his son; Casey Jones; Roscoe Turner, who is unhappy about CAB's attitude on feederlines; Jim Pedler, the gracious Goodrich host; Bevo Howard, who did his usual fine acrobatic job and who really showed what the Bonanza will do; Ken Boedecker of Wright, with his ever-present camera; Ray Ireland, Norv Rader, Walt Swan and Dick Rummel of United Air Lines; Jim Austin of Capital; Bill English, Barney Rawson and Reg Campbell of Trans-Canada; Wendy Reid, TCA trans-Atlantic pilot; Stedham Acker, who knows a little something about air shows; Dick Boutelle of Fairchild; Joe Harris and "Slim" Jones of Shell; Jack Wentzel, Herb Fisher and Mark Nevils of Curtiss-Wright; Benny Griffin, manager of Washington National Airport; Dex Martin, South Carolina aeronautics commission; Phil McKnight of Beech; Ken Ellington of Republic; Dick Darrow of Martin; Rog Fleming of Allison, and Walt Bonney of Bell . . .

Now we know that airlines, in their advertising and displays, are sometimes inclined to stretch things a fur piece, but it seemed to us that Pan American Airways pulled everything out of shape at Cleveland . . . Sitting in the outer lobby of the Carter Hotel was a great big model of the commercial version of Consolidated Vultee's B-36 six-engined pusher-type bomber . . . It was all painted up with PAA's name and colors, and it even had an NC number on it . . . There was a sign saying something about PAA looking into the future . . . That's a fur look, boys . . .

We were under the impression that the airlines were out scratching for business and that consequently they were going all-out on passenger service . . . But what we saw during an hour's observation at Washington National Airport the other evening was reminiscent of the war days . . . We saw passengers hurriedly loaded into a DC-3 which wasn't in a hurry to go anywhere . . . Pretty soon out came the passengers' baggage to be loaded . . . And then in a little while out came the crew . . . In another little while, the plane left . . . The exact same thing happened with a DC-4 . . . Then another plane arrived and someone forgot to open a gate so the passengers could get into the terminal . . . After the group had milled around on the ramp for a while, one of the more enterprising members finally figured out how to open the gate . . . But he got no help from the airline . . . This is definitely not the way to win friends and influence passengers.

We had a story some months ago on how Capital Airlines had used penny postcards to sell air transportation . . . Because the postcards were eye-catchers, the campaign had been quite successful . . . Capital is now using the same deal to sell air cargo . . . One card is headed "Does Your Freight Rate?", another "Are You a Chipper Shipper?", and a third "Short of Stock, Doc?" . . . If the campaign is as successful as it was with passengers, cargo loads should increase . . .

We always read with interest about air transport in faraway places . . . If you think it's tough to get an operation started in the U. S., you should read about some of the difficulties British Overseas Airways Corp. had trying to complete construction of the terminal at Victoria Falls, down in South Africa . . . The flying boats land on the river there, and the terminal was to be on the south bank . . . BOAC picked a site that had been used for years by a herd of elephants as a bathing place . . . Reason was that the elephants had flattened the ground very nicely . . . But the elephants didn't understand that they'd been dispossessed—they kept coming back and flattening the foundations of the terminal . . . Finally they were driven up-river by game wardens and police . . . Next, a hippo took up residence near the compound, and spent his spare time chasing the local employees up trees and pushing over their flimsy houses . . . After he was driven away, the crocodiles gave trouble, and a .303 rifle has been used for scaring operations . . . Anyway, the terminal is completed and in operation . . . It's been appropriately nicknamed "Jungle Junction" . . .

ESSO SALUTES THE U.S.A.F.



The United States Air Force is the first line of America's defense—in war and in peace.

Under a contract with the U. S. Government, Esso Marketers outside the U. S. currently handle the aviation fuel and oil requirements of all U. S. Government planes including all U. S. Air Force aircraft at more than 75 air fields in North and South America, Europe and Africa.

Esso is proud of its role in helping to maintain and serve this mighty force.



ESSO EXPORT CORPORATION, AVIATION DEPARTMENT, 25 BROAD STREET, NEW YORK 4, N. Y.

Improved Flight Recorders Expected from Airline Tests

By WILLIAM D. PERREAULT

Although flight recorder requirements have been temporarily relieved by CAB, the problem remains high on the list of active projects facing airline engineering staffs. Actually, it is more pertinent than ever before because the airlines have been assigned specific action to be taken in furthering the recorder development program. Until this time the airlines had been hopeful that the requirement would be canceled prior to the effective date and gave very little concern to the ruling as issued.

ATA's action in promoting a service test program for recorders did reduce the number of recorders which would have to be installed from 107 (under the one in 10 ruling) to 24 which would seem in itself a major accomplishment. However, the airlines now have the responsibility of policing their own activities in a service test program.

ATA has set up a schedule (see table) which calls for 17 airlines service testing three types of recorders. Meanwhile other recorders are under development and these may be introduced to the program as it progresses. The three units outlined for installation were developed by General Electric, Hathaway Instruments, and Control Instruments Corp. Also showing interest in the project are Friez, Frederic Flader and Bendix.

None in DC-4. Recorders will be installed in the DC-3, DC-6, Constellation and Convair-Liner. ATA feels that this gives coverage to the entire range of transport since it includes twin-engined and four-engined aircraft, tricycle and conventional gear arrangements, pressurized and unpressurized aircraft, and Pratt & Whitney and Wright powered airplanes.

Some segments of the industry are disappointed that the program does not include the DC-4 or Martin 2-0-2. Basic assumptions in regard to type assignments is agreed upon but the feeling is that the DC-4 in particular has its own encephalogram vibration problems which would aggravate recorder discrepancies featuring the tail mounted recording device recommended by CAB.

The DC-3 airplane with 12-volt electrical system provides a genuine problem in that one of the recorders scheduled for test on the DC-3 requires 115 volts AC current. All the newer airplanes use 24-volt electrical systems for which conventional arrangements are made for inverters that produce 115 volts AC but such units are not available for operation off a 12-volt system. It may be necessary to design a unit to suit this application.

Since some DC-3 airplanes are

proof housing will result in a weight penalty. Although load factors are down, the airlines continue to be very weight conscious in their design considerations.

Improved Models. The airlines have carried on considerable testing of the

General Electric flight recorder and have gained valuable information from the tests. As a result improvements have been made in the recorder which should provide for trouble-free operation. One of the major changes has been the design of a new set of sensing heads to replace the old installation which relied on a sensing head attached to the aircraft's standard instruments.

The task of adapting the sensing head to the many types of instruments in use by the airlines was a major task (see cut). The new sensing heads or transmitters are made by Kollsman and have yet to be service tested. First in-

stallation will be made on a Capital Airlines airplane this week.

General Electric also made other changes in the recorders to improve reliability and facilitate maintenance. It expects to have some 50 two-channel recorders off the production line by Oct. 15. In quantity the unit is expected to sell for approximately \$1,125, but the cost will probably be higher on the limited service test models.

Hathaway Instrument Co., who made flight recorders for the Army Air Forces during the war, expects to have two models on the market early in 1949. One of these will be direct recording while the other will be remote recording with

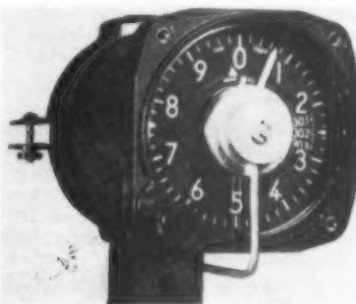
Flight Recorder Schedule for U. S. Airlines

The table below indicates the assignment of flight recorders to the airlines for the service test program which will be carried out as an alternative to the CAB ruling which would have required recorders on one of every ten aircraft of the scheduled operators. Six units will be tested on each type of airplane in the test. GE—General Electric; HA—Hathaway; CI—Control Instruments.

Airline	DC-3	DC-6	Constellation	Convair-Liner
American			GE	GE-GE
Braniff		CI		
Capital	GE			
Chicago & Southern	CI			
Colonial	HA			
Continental				HA
Delta		GE		
Eastern			CI-GE	
Mid-Continent	HA			
National		CI		
Northeast	CI			
Northwest	GE			
Pan American			CI	CI-CI
Pan American-Grace		GE		
Trans-World			HA-HA	
United		HA-HA		
Western				HA

equipped with 24-volt systems it would seem possible to meet the same end by testing the unit with an airline using the 24-volt system DC-3 airplane.

Flight recorders may be of the remote indicating or direct indicating type. Some preference exists for the remote unit since it permits locating the recording mechanism in the tail where it is safer in event of fire, but this calls for resultant complexity in design. Units located over the center of gravity must be enclosed in fireproof housing and there is some confusion as to what will be considered as fireproof. Even under the most favorable conditions, a fire-



Sensing Heads—Old and new sensing head used with the General Electric flight recorder. Originally a miniature selsyn was mounted on front of the aircraft's regular instrument. A small yoke over the instrument pointer drove the selsyn. The new head, made by Kollsman, is independent of the aircraft's instruments and is expected to simplify installation and upkeep of the system.

OPERATIONS-MAINTENANCE

the chart mechanism in the tail assembly of the airplane. The direct recording unit weighs about 10 pounds, operates on 12 or 24 volts DC, is direct mechanical in operation with no servo mechanism, vacuum tubes or special power supply equipment. Details of the remote indicating unit have not yet been released.

Hathaway's previous experience in constructing flight recorders should prove a valuable asset to the program.

Control Instrument Corp is expected to market a remote indicating type of recorder around the first of next year. In accordance with their expressed interest in the service test program, arrangements have been made to test their unit, but the airlines have not had opportunity to look over the unit or comprehensive information relating to it, since it is still very much in the developmental stage. It is expected to sell for less than \$1,500 per unit.

Frederic Flader, Inc. has under development a six channel, remote indicating unit utilizing magnetic tapes for the recording medium. A unique feature of this unit is the possibility that it will permit recording speech if this should prove desirable as some airlines feel it would be.

In operation the Flader unit would consist of an airborne and a ground unit. The airborne unit would simply make magnetic tape recordings which could be periodically erased or removed for transcription by the ground unit. When transcribed, the transcribing mechanism would make a chart of the applicable information and play back speech on a radio type unit. The airborne units would sell between \$1,000 and \$1,200 while the ground transcribers would cost \$1,500 to \$2,000. Availability is tentatively set for early 1949.

The overall program for use of flight recorders has been considerably speeded up by the inauguration of this flight test program and all indications are that rapid strides will be made toward production of one or more effective units which will prove of general value to the airlines in normal operation as well as in the event of an accident.

CERTIFICATION

Boeing 377 Certificated

Boeing's 377 Stratocruiser has received formal CAA certification following flight testing under CAA requirements for the past seven months. This was but a portion of the flight testing which carried the three airplanes that participated in the tests some 210,000 miles and qualified the airplane for a gross take-off weight of 142,500 pounds, 7500 pounds higher than the original specification called for. Although some of this additional gross is taken up in fire prevention and luxury items, approximately 4500-5000 pounds will be available in extra payload.

The performance figures were based on use of 130/145 fuel which probably will not be available to the airlines at this time. However, the major advantage of this grade fuel is at take-off under particularly adverse conditions with which the airlines will not ordinarily be affected. Cruising speed at approximately 1900 horsepower is 340 miles per hour.

During 200 hours of functional and reliability tests the airplane made 54 transcontinental flights. Pan American, Northwest, American Overseas, Scandinavian, United and British Overseas Airways are expected to take delivery on Stratocruisers starting in the fall.

SAFETY

CAB In the Middle

No one envies the CAB's position in trying to find a course of action on the flight engineer ruling which will satisfy its own feeling that a flight engineer will increase operating efficiency and the view of the airlines that further study is necessary before any such conclusion is justifiable. Undoubtedly any thorough study, desirable as it may be, will be time consuming and expensive.

CAB members feel that the time element may be enough to place them in a bad light. If an accident should occur during the interval when such a study is in progress, the natural tendency would be to point to the "undermanned" crew and indicate, as in the oxygen mask fracas, that Air Line Pilots Association had recognized the need and made strong recommendations without anyone listening to the plea.

The Aviation Underwriters Association, an organization that insures several U. S. airlines, has informed CAB that it is against the use of flight engineers as specified in the ruling. The underwriters position appears to be the closest to neutral of any of the interests. Safety is a primary thought with the organization but at the same time they are not influenced by pressure to which CAB is undoubtedly exposed nor are they influenced directly by the extra personnel involved, the cost of training these crew members or modifying the cockpit to accommodate them, nor the possibility of "featherbedding" practices which influence the airlines. They also have a substantial stake in the results of any such decision.

Meanwhile, the Flight Safety Foundation, a non-profit organization headed by Jerome Lederer, is undertaking a survey of crew manning requirements which is being sponsored by the DC-6 operators: American, United, Delta, Panagra and Braniff.

In announcing the study Lederer said: "As aviation progresses, the problems of crew manning requirements can be expected to grow in importance and complexity."

Some time ago the Foundation ini-

Air power is peace power

On Air Force Day, Sept. 18, Lockheed Aircraft Corporation salutes the men who fly to keep America strong.

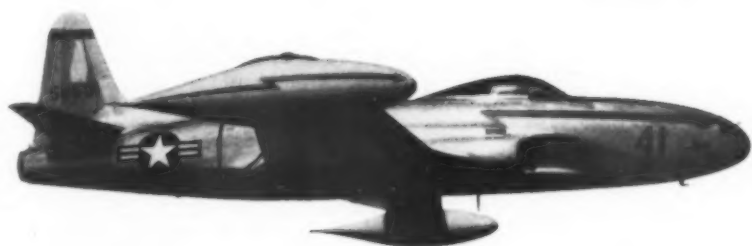
LOCKHEED

AIRCRAFT CORPORATION

BURBANK, CALIFORNIA

Look to Lockheed for Leadership





The Air Force F-80 Lockheed Shooting Star.

AIR reviews

As planes of the U.S. Air Force thunder through our peaceful skies in celebration of AIR FORCE DAY, they carry a message of hope to all peoples.

For, with the authorization by Congress of a 70-group air force, notice is served that this country is determined on a course of leadership in peace and freedom for people everywhere.

Here at Douglas—as in laboratories, drafting rooms, plants and on testing fields across the nation—developments speed this action of Congress.

Working closely with Air Force design engineers, technicians and strategists, Douglas continues to create the kind of dependable aircraft which have served the military so well for a quarter of a century.

Since 1924, when Army pilots in Douglas World Cruisers first circumnavigated the world by air, we have been privileged to supply a large share of all U.S. combat and transport aircraft.

Newest in the Douglas family is the C-124. This giant all-purpose transport is designed to accommodate large ground force equipment. Two and a half times the size of the C-54, it will fly a maximum payload of 50,000 pounds 1,200 miles and return to base without refueling. Also now in work is the Douglas DC-6A—an all cargo version of the DC-6 passenger plane—capable of flying a 15-ton payload at 300 m.p.h.

As these projects go forward—together with our activity in guided missiles, rockets, supersonic jets, commercial and military transports—we of Douglas have but one single goal: effective aeronautical progress. To us this is the meaning of AIR FORCE DAY—every day!

Donald W. Douglas

PRESIDENT
DOUGLAS AIRCRAFT COMPANY, INC.
SANTA MONICA, CALIFORNIA

OPERATIONS-MAINTENANCE

tiated a study of cockpit problems which soon indicated the need for additional scientific research. This project will seek to bring together from various sources available information related to crew manning requirements. The knowledge can be of practical value both in clarification of immediate problems and in determination of lines along which future cockpit research should be directed.

The need for scientific research in the problem of crew manning was one of the major points stressed by ATA in their comments to the CAB on the flight engineer ruling.

Martin 2-0-2 Grounded

Northwest Airlines' Martin 2-0-2's remained grounded last week while company and CAA personnel carried out extensive inspection to determine if structural deficiencies contributed to the crash at Winona, Minn., on Aug. 29. Reports of eye witnesses and a post accident comment by a regional CAA agent that the airplane "apparently came apart at the seams" caused Northwest to voluntarily ground the 24 transports and substitute DC-3 and DC-4 equipment for the flights in concern.

Present indications are that the airplane flew into the center of a tornado which is known to have done considerable damage to homes in the area of the accident.

CAB Accident Report

EAL at Oxon Hill: Failure of the flight to follow recommended instrument procedures was cited by CAB as the probable cause of Eastern Air Lines' DC-3 crash near Oxon Hill, Md., on Jan. 13, 1948. Conclusion was based on failure of the surveillance radar scope to pick up any sign of the airplane's location during the time when it should have been in view and just prior to the crash.

If the procedures outlined in Eastern's operations manual were followed, the airplane would have been at 1500 feet altitude and well within the scope of the radar equipment. At lower levels ground interference might well have prevented its appearance on the scope. One month earlier the outer marker for the ILS approach to Washington National Airport had been moved some two miles southward. Until that time the recommended procedures called for an altitude of 1,000 feet at this reference point.

Since the manual recovered from the airplane had not been brought up to date it was felt that the pilot may have used the previous recommendations and as a result misjudged his position in regard to the airport and runway. Point of contact was with the tops of a sycamore tree 106.1 feet above sea level and some 600 feet east of the Potomac River.

SAFETY SLANTS

IN ACCEPTING the National Safety Council's Billion Mile Aviation Safety Award plaque for 1947, C. R. Smith pointed out that to the end of July, 1948, American Airlines had completed 3,310,679,720 safe passenger miles. This is equivalent to carrying 17,609,999 passengers from New York to Boston, or the entire population of Los Angeles to Chicago. So far as the individual passenger is concerned, this means flying in a DC-6 or Convair at 300 miles an hour, 24 hours a day for 1,260 years!

Pilots who have done it warn that care must be used when using reverse pitch when there is water on the runway. The backwash may seriously obscure vision. A tip worth remembering.

Although the fumes from carbon tetrachloride are toxic, it has been widely used as a fire extinguisher for years. Its saving grace has been the irritating odor that it gives off. This odor gives warning before conditions become dangerous to life and cause the user to seek a safer atmosphere. Carbon dioxide has no such warning odor, but consideration is being given to adding an obnoxious scent to all cylinders used in aircraft fire extinguisher systems. The crew would then have immediate warning in the event of accidental discharge or leakage and could take proper steps to avoid trouble. The Association of Fire Extinguisher Manufacturers is reported to feel favorably toward the idea and aviation fire protection engineers are all for it. Approval seems to be unanimous.

United Air Lines has been experimenting with an improved bumper for passenger ramps. It consists of a section of heavy rubber hose about six inches in diameter. There are no protruding pieces of metal to damage the aircraft and the bumper is easy to install and maintain.

It seems like a simple thing to watch out that there is clearance below a wing, so that in the event of strut failure or a tire leaking, no damage could occur, but failure to do this has caused many a wing to buckle. Watch out for overlapping wings!

Do not allow employees to use power tools unless they have been instructed in the safe method of operating them, and all safety devices and guards are in good operating condition. Check occasionally for yourself and take prompt steps to correct any unsafe conditions, or unsafe practices. You may prevent a serious injury if you do this.

AMERICAN AVIATION

MAINTENANCE

Keeping Planes Shiny

When an observer recently asked Stanley Shatto, v. p. of maintenance and engineering for Western Air Lines, how it happened that a Western DC-4 parked on the ramp at the Los Angeles Airport looked so bright and shiny, this was his somewhat aggrieved reply: "Elbow grease!"

But it is true that the chemists and the cleaning compound manufacturers have been making considerable progress in developing new products and engineering new procedures in the three years since the war to help the airlines solve one of their more annoying and expensive problems, cleaning ships.

For example, H. L. Smith, v. p. of Kelite Products of Los Angeles, one of the nation's larger industrial compound manufacturers having a department specializing in aviation cleaning, reports that his company now is producing 15 products for airplanes and not one is the same as it produced prior to the war. All represent new formulas or improvements in old formulas, and are designed for specific purposes.

"We're still making progress and I wouldn't be surprised if in another three to five years we had another 15 new products," he added.

The airlines probably wouldn't mind so much having to use a large measure of elbow grease to polish up an airplane if they could find the time to do it. But laying up an airplane costs money and the result is that, for the most part, the only time the polishing rag is applied is at the 1,000-hour check.

At the intermediate checks between engine overhauls, most airlines try to get in a quick degreasing job, and some airlines employ a washing procedure at the time of the No. 3 check.

Progress Against Corrosion. No two airlines, probably, ever agreed on precisely the same cleaning agents and the same procedures to keep their airplanes looking new. But all unite in their fear of chemical agents that might bring about corrosion, and this represents one phase of cleaning where the compound makers have made strides recently through the development of acid washes free of corrosive attack. The Kelite company, for example, has an acid wash which it recommends to replace abrasives in removing oxide from aircraft surfaces at a marked saving in man-hours and guarantees it will have no corrosive effect.

One of the newer entries in the aviation cleaning field, the Cee-Bee Chemical Co. of Los Angeles, has evolved cleaners with which it contends an airplane can be kept clean by washing it every two weeks, or at not less than 20 hour intervals, using only 10 to 35 man-hours, depending upon the size of the airplane, and doing a brightening job at engine change periods with the same average man-hours required for



Acres and Acres— Some idea of the size of Pan American's Miami overhaul base can be had from this aerial view with numbers indicating the buildings occupied by PAA. The eight buildings are: 1-engine test cells, 2-engine overhaul buildings, 3-aircraft accessory overhaul, 4-warehouse, 5-office buildings, 6 and 7-warehouses, and 8-employees' cafeteria.

the latter. No wax polishing is needed.

Since airplanes and airplane engines involve several metals, the problem of the compound makers is complicated by the different reaction various chemicals have. Magnesium, for illustration, can be cleaned with caustic soda, the strongest alkali known, but salt will ruin it.

The airlines also are creating new problems for the manufacturers of cleaning agents. Engine time on the R-1830 and R-2000 engines used on DC-3 and DC-4 aircraft now is up to 1,000 hours and it is climbing on the R-2800's and 3350's.

The longer an engine runs before overhaul the greater the accumulation of grease and sludge and even more disturbing, the more carbon deposits pile up and change in consistency. Pistons and other carbonized parts are immersed in solvents overnight and then seed-blasted, but if engine time keeps on going up engine cleaning eventually may dictate the stopping point simply because the cleaning problem may go beyond the power of the chemicals to do the job.

Integral fuel cell stripping is another new complication which has the chemists working overtime. No sealant can be said to be easily removed, but some are more difficult than others. Certain thiokol sealants especially have presented problems, but they are fast being licked.

Working hand in hand with the airlines the manufacturers of cleaning compounds are leading the way to cleaner airplanes, with resultant simplification of inspection and maintenance.

PAA Personnel Shift

In implementing its overhaul base at Miami, Pan American Airways is transferring a considerable portion of the personnel at New York and in addition to this is hiring large numbers of new

employees. Personnel involved include engineers, inspectors, foremen, draftsmen, clerks and a large group of mechanics.

From a force of 1,100 a year ago, PAA's maintenance department will expand to 2,725 when the present program is in full operation late in October and eventually with the introduction of the Boeing 377 will utilize 3,500. To facilitate this rapid expansion two PAA foremen and a personnel representative are making a recruiting trip across the country.

OPERATIONS

UAL Flight Managers

To insure that supervisory flight personnel at key stations will continue to have a first-hand knowledge of piloting problems on the line, United Air Lines is promoting 22 senior captains to positions of assistant flight managers as the first step in a program which calls for alternate months of flight schedules and ground supervisory work for those concerned.

Chief duties of the assistant flight managers, who will be stationed at Chicago, New York, Denver, Seattle, San Francisco and Los Angeles, will be concerned with equipment, policies, regulations and procedures, CAA requirements and maintenance of high standards of piloting proficiency.

TWA Operations Realigned

A reorganization of TWA's operations department has been completed to increase operating efficiency and simplicity of administration. Under the new arrangement only six department heads will report directly to J. A. Collings, vice president of operations, compared to 17 in the past. Key men in the new organization set up will be W. K. Jacks, general operations manager, international, and F. E. Busch, general operations manager, domestic.

These Aircraft Available

These aircraft are now available for immediate delivery. They may be converted to your own specification or may be purchased "as is." They are ideal for airline, cargo or executive use.

OTHER AIRCRAFT AVAILABLE (prices and information on request)

Boeing B-17G — NL licensed — 41:00 total hours
Curtiss C-46F — 350:00 total hours
Lockheeds — Lodestars — Electras — Twelves
Beechcrafts — Bi-planes and Bi-motors
Boeings — 247Ds — P-12 (Stunt Ship)
Stinson — SR-10Es — Douglas C-54Bs with E conversion — Consolidated B-24s, LB-30s — Lockheed P-38s

AIRFRAME SPARES FOR

North American Harvards — B-25s; Douglas C-54s, C-47s, DC-3s, A-26s; Curtiss C-46s; Consolidated PBYS; Lockheed Lodestars, Hudsons, Electras, Twelves, P-38s; Fairchild PT-26s.

ENGINES • PROPELLERS • ELECTRICAL • HARDWARE

ALL AIRCRAFT SHOWN SUBJECT TO PRIOR SALE

♦ U. S. EXPORT LICENSE # 124

AGENTS WAR ASSETS ADMINISTRATION

THE BABB CO., INC.



GRAND CENTRAL AIRPORT • 1007 AIRWAY • GLENDALE, CALIFORNIA, U. S. A.

NEW YORK OFFICE:
444 Madison Avenue
New York 22, N.Y.

WASHINGTON, D.C. OFFICE:
Dupont Circle Building
1346 Connecticut Ave., NW
Washington, D.C.

CANADIAN OFFICE:
Trans-Atlantic Bldg.
Montreal Airport
Dorval, Quebec, Canada

HOLLAND OFFICE:
Schiphol Airport
Amsterdam, Holland

SWITZERLAND OFFICE:
9-11 Place de la Fusterie
Geneva, Switzerland

HONOLULU OFFICE:
2963 Kalakaua Avenue
Honolulu, T.H.

PBY's



17 PBY's—Your choice \$10,000.00
 40 PBY-SA's—Your choice \$15,000.00
 Low total time; some with nearly new or zero time engines

C-47A's and B's



Low total time; NC licensed. Excellent, clean condition, 24 Volt Six to choose from—\$25,000.00 each

A-26B's

NL-67943
 NL-67944



Less than 10:00 hours total time. NEW R2800-79 engines
 All NEW modifications; spotless condition. 300 plus MPH cruising speed, long range. \$55,000.00 each

B-25J's

NL-68777
 NL-66548



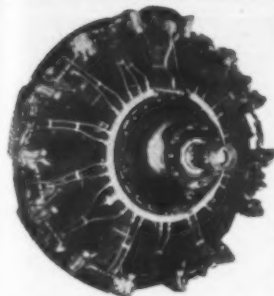
343:00 total hours—\$17,500.00
 152:00 total hours—\$47,500.00
 NL-66548 has deluxe interior

and in spotless condition

PT-26's (Cornells)



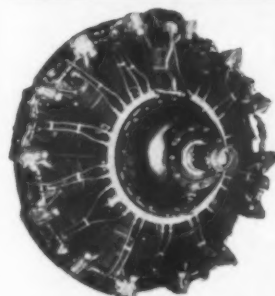
200 HP Rangers. Complete stock of Air Frame and Engine spares
 120 aircraft to choose from
 Prices: \$750.00 to \$2000.00



R1830-92

150

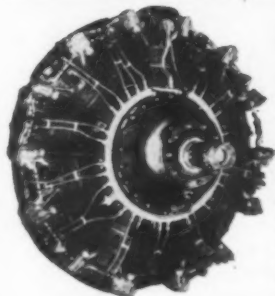
MAJOR OVERHAULED to meet AIR CARRIER requirements by authorized PRATT & WHITNEY Agency; low time first run, known history; each \$3500.00



R1830-92

1600

MAJOR OVERHAULED to meet C.A.A. requirements, low time, fully warranted; each \$2250.00

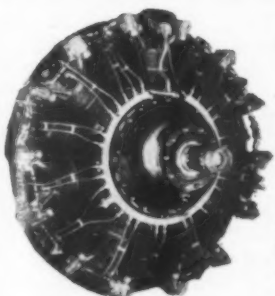


R1830-43-65

(Converted to 1830-92)

250

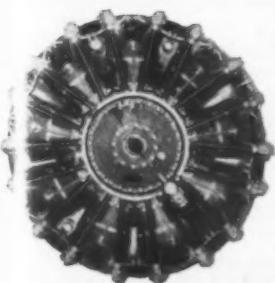
MAJOR OVERHAUL (military) first run (average total time 300:00 hours) with zero time since conversion to R1830-92 specification by recognized agency, block tested C.A.A. Form 337, warranted; each \$1795.00



R1830-43-65

250

MAJOR OVERHAULED (military) average total time 300:00 hours, free from rust or corrosion, original logs, C.A.A. Form 337 supplied; each \$675.00



R1340-AN1

100 NEW

NEW (unused) P & W Engines, each \$3500.00

Special Offering

PRATT & WHITNEY ENGINES

The Pratt & Whitney engines illustrated here are offered "Subject to Prior Sale," packed and inhibited for indeterminate long time storage, complete with records backed by a world wide organization with more than TWENTY years of experience.

All prices are quoted F.O.B. Glendale, California

OTHER MISCELLANEOUS ENGINES AVAILABLE

P & W R2800-79, -77, -75, -65, -59, -57, -43, -31, -21

P & W R1830-94, -88, -75, -53

P & W R985-50, -25 -AN14, -AN12, -AN6, -AN3, -AN1

WRIGHT R2600-29, -13, -8

WRIGHT R1820-87, -60, -56, -42, -40

LYCOMING - JACOBS - RANGER -

CONTINENTAL

Our Inventory Pratt & Whitney Parts

at Government Acquisition cost - \$30,000,000.00

P & W, Wright, Allison and Packard

Tools - \$2,500,000.00

AGENTS WAR ASSETS ADMINISTRATION

THE BABB CO., INC.



GRAND CENTRAL AIRPORT

1007 AIRWAY - GLENDALE, CALIFORNIA, U.S.A.

ATTENTION
all DC-4 Operators

***Solar manifold
replacements now
available through...
Douglas**

When you need manifold replacements, order from the Douglas Aircraft Company to get the finest built . . . Solar manifolds that literally give you "more miles per manifold." The U.S. Army recently replaced all manifolds on their serviceable C-54's with Solar equipment. There are at least 10 outstanding reasons for this acknowledgment of Solar's superiority:

1. Solar exhaust systems have only two moving parts per engine instead of the usual 28.
2. Superior service life and lower maintenance cost have been demonstrated by actual airline operation.
3. The reduction in cross-sectional area has resulted in a compact configuration which will reduce engine cooling air drag.
4. Only 5 sections accommodating all 14 exhaust ports.
5. Maximum of 5 bolts per section, all easily accessible.
6. Smooth port leg fairings eliminate hot spots.
7. Manipulation of only 20 different parts for complete installation per airplane. All tailpipe can be removed individually.
8. All sections (except 2 outlets) interchangeable on the 4 engines.
9. Increases your payload by a substantial weight saving — only 75 lbs. per engine with tailpipe.
10. A decreased heat transfer area and reduced leakage for safer operation.

By special arrangement Douglas Aircraft Company is exclusive distributor for Solar DC-4 manifolds, and further information can be obtained from either Douglas, Santa Monica, or any Solar office. Solar also manufactures components for jet and gas turbines and guided missiles.

*C. A. A. Approved



SOLAR Aircraft Company

San Diego 12, Calif. • Des Moines 5, Iowa • 331 Mutual Home Bldg., Dayton 2, Ohio • 60 E. 42nd St., New York 17, N.Y.
1025 Connecticut Ave., NW, Washington 6, D. C. • 357 S. Robertson Blvd., Beverly Hills, Calif.

AMERICAN AVIATION

RESEARCH

Convair Noise Solution

Consolidated Vultee Aircraft Corp. and airline operators of the Convair-Liner are working on a solution for lowering the noise level in the rear of the Convair's cabin. Already in limited use and being installed on production airplanes in an extended augmentor tube which is six inches longer than the original design. American has about six airplanes modified by use of the new augmentor tubes and Pan American has several.

The extended tubes carry exhaust gases further rearward and direct them to a point aft of the cabin seating area so as to minimize the tendency for the gases to "bounce" off the fuselage with resultant noise. Another fix now under study consists of using mica insulation between the fuselage skin and cabin interior lining.

Experiments now in progress are attempting to establish the most desirable arrangement and the thickness of mica to be used. Indications are that mica of from .001 to .003 inch will be used for this purpose. Chief drawback of mica insulation and one reason why it wasn't used in original design is the increased weight involved.

Hydraulic Fluid Tests

The Aircraft Industries Association has designated the Aeronautical Laboratory of Cornell University as its representative in conducting evaluation tests on non-flammable hydraulic fluids. Endorsed by ATA, the new test program is a continuation of the work of the Research and Testing subcommittee of the AIA started more than two years ago and will further the program being carried on by the CAA and the Navy Testing Laboratory.

Every man who has ever claimed that water could be adapted for use as hydraulic fluid in aircraft systems will be pleased to note the composition of the non-flammable fluids now under test by the CAA and the Navy Testing Laboratory. Chief ingredients of hydrolube U-4 manufactured by Carbide Carbon and Chemical Co., and H-1 manufactured by Hollingshead Corp., are 42% water and 57% glycol with small percentages of thickeners and corrosion inhibitors.

At the Aeronautical Training Center in Oklahoma City the CAA is carrying on service tests using hydrolube U-4 in the hydraulic systems of a DC-3 and DC-4 airplane. The DC-3 has logged about 150 hours flight time since the test started and the DC-4 has about 125 hours flight time. From a service standpoint both airplanes are performing normally. The only difficulties encountered have been a slight reaction between the fluid and magnesium parts used in the wheel and brake assemblies

Engine-Propeller Overhaul Times

Pratt & Whitney Engines

The wide range existing between overhaul times of various model engine and propeller combinations with different operators is emphasized by these figures released by CAA. For example: One operator using the P&W S1C3G is required by the terms of his operating certificate to overhaul the engine at 700 hour intervals while another operator is given 1,000 hours between overhauls. On the same engine the Hamilton 23E50 propeller overhaul time with two operators ranges from 700 hours to 2,000 hours.

Airplane	Eng. Model	Min.	Max.	Prop. Model	Min.	Max.
Beech C18S Boeing 247 DC-3 Series	985	600	600	HS 22D30	600	600
	1340	500	500	12D40	500	500
	1830	700	1000	23E50	700	2000
	S1C3G	700	1000	23E50	700	2000
DC-4 Series	2SD13G	900	1200	23E50	900	2400
	2000-7	1000	1000	23E50	1000	2000
	2000-9	1000	1000	23E50	1000	2000
	2000-11	1000	1000	23E50	1000	2000
Convair 240 Martin 202 Douglas DC-6 C-W C-46	2800	700	700	43D60	700	700
	2800	800	800	CE C632SA	800	800

Wright Aeronautical Engines

DC-3 Series Lockheed C-60	G-102	700	925	HS 23E50	700	1850
	G-102	700	825	33D50	700	825
	G-202A	850	1000	33D50	850	2000
	G-202A	850	1050	23E50	850	2100
	G-205A	850	950	33D50	850	2000
DC-4 Series	9Hd-1	900	900	HS 23E50	900	1800
	BA-3	800	900	HS 33E60	800	1800
Lockheed L-49 649, 749	BD-1	625	700	23E50	550	550
	BD-1	625	700	CE C632SA	700	1400

and pump bearing failures which have been accounted for and corrected.

Although the extent of reaction between hydrolube and magnesium is very slight and the possibility that it would be noteworthy in operation doubtful, the H-1 formula of Hollingshead has apparently overcome this difficulty according to test indications. H-1 is under test by the Naval Research Laboratory in a Douglas AD-1 with "very satisfactory results." Only reported difficulty with this fluid has been failure of bronze inserts in the pumps and this has been overcome.

Both fluids being tested are said to be useable in systems designed for vegetable or mineral oils but present indications are that the Hollingshead fluid has a better viscosity curve permitting operation at temperatures as low as minus 65 degrees Fahrenheit as compared to minus 50 degrees F. for hydrolube. Further compounding of both types of fluids may eventually bring trouble free operation.

The remaining hurdles facing non-flammable hydraulic fluids are an estimated cost of \$2 a gallon compared with under 90c for regular fluid and a weight penalty of approximately two pounds per gallon. Although initial cost may be off-set by minimized system leakage experienced with the new

fluids the additional weight is serious on aircraft with systems containing up to 35 gallons of hydraulic fluid as some transport aircraft do.

MODIFICATION

Larger Loads for S-51's

Los Angeles Airways is modifying its fleet of five S-51 helicopters for effective use of the craft's increased payload capacity. Even before the increase in payload, L. A. Airways was faced with the problem of space limitations confining payloads to 750 pounds compared to the 800 pound weight capacity. With the addition of high activity rotors the helicopter's take off weight went from 4,985 pounds to 5,300 pounds and the payload from 800 to 1,100 pounds.

The modification consists of adding a "bustle" aft of the rear cargo compartment, removing the rear 50 gallon fuel tank and relocating the oil tank and battery to the forward area. The cargo capacity of the rear compartment is raised 35.5 cubic feet to 45.5 c.f. closely paralleling the 53.3 c.f. capacity of the forward compartment. The remaining 50 gallon forward fuel tank will supply the needs of the helicopter in its present service since fuel consumption is only 27 gallons per hour.

here's the "crew"



Counter Sales Agent Edward Pawlak — "I supply correct travel information — make reservations and sell tickets."



Lead Ramp Serviceman Matt L. Sasgen — "My job helps assure on-time boarding and departures — looks to passenger comfort and convenience."



Telephone Sales Agent Herbert Kirchner — "Our function is fitting travelers' needs to available space on any flight, anywhere."



Radio Operator Melvin Hook — "I am in continuous contact with Mainliners in flight, relaying instructions and information as required."



Teletype Operator Mary Cox — "I handle hundreds of messages a day that aid in operating United Air Lines efficiently."



Secretary Irene Player — "It takes a large and efficient office 'team' to administer, plan and co-ordinate flight operations."



Ramp Serviceman Melvin Triebke — "Mainliners can't fly until baggage and cargo are loaded — that's my job."



Building and Maintenance Engineer Howard Malek — "Contributing to operating efficiency of hangars and ground facilities is my job."



Mechanic Albert Ward — "Maintaining aircraft in top mechanical operating condition is my job."



Chief of Ramp Service Jerome Sehlke — "I co-ordinate the many activities necessary in handling Mainliners on the ramp."



Doctor George Kiders — "Efficient medical service assures peak physical condition of flying personnel at United."

of your United Mainliner!

Normally, you think of an airliner crew in terms of pilots and stewardesses alone. Actually, scheduled flight operations involve the plans and work of thousands of people.

The entire United organization is, in fact, a tremendous "crew"—10,000 trained experts whose purpose, what-

ever their particular job, is to keep Mainliners flying efficiently on schedule, and to provide the traditional "Service in the Mainliner Manner."

On these pages are pictures of the "crew," each representing hundreds of others in various occupations that make up the United team.

UNITED AIR LINES

PASSENGERS • MAIL • EXPRESS • FREIGHT



Stewardess Cathleen Corkery—"Providing 'Service in the Mainliner Manner' is my job—and what a wonderful job it is!"

Stewardess Maude Waddell—"I see to the many services aimed towards passenger comfort and enjoyment in flight."

Flight Captain Herbert Nywessing—"Every United Mainliner Captain's skill and judgment result from long experience and training."

First Officer Obel Tokle—"The Captain and I function as a team in operating Mainliners efficiently."

Architect and Designer James Crichton—"My work aids ground operations by proper planning and design of hangars and facilities."



Dispatcher Floyd Sharp—"Flight plans and flight information are worked out jointly beforehand by pilots and dispatchers."

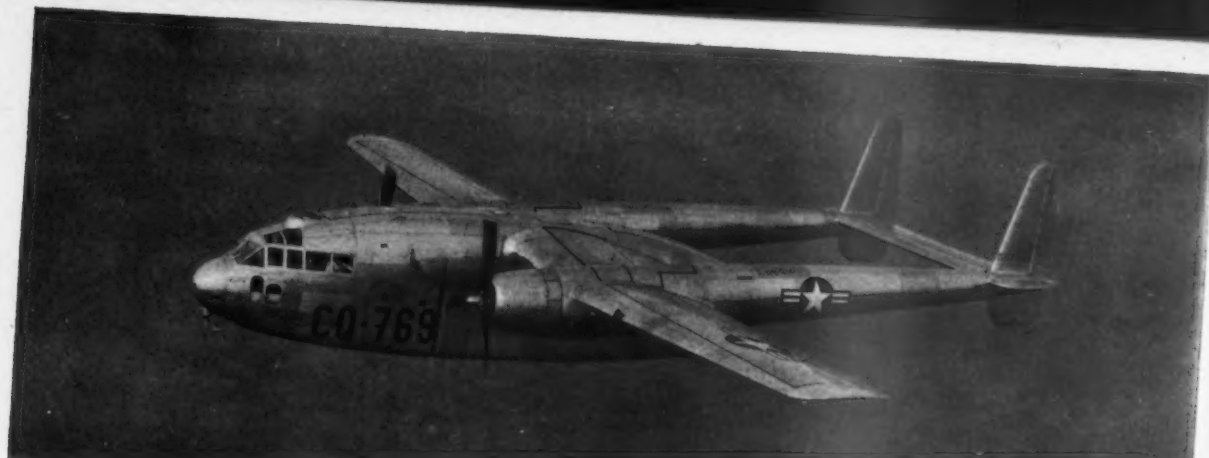
Meteorologist William Seatz—"We're on duty 24 hours a day charting, analyzing and projecting weather conditions."

Salesman Paul McEneaney—"I bring advantages of United service to the attention of shippers and travelers."

Chef John Nieder—"Providing 'the finest food aloft' is the aim of all United's commissary personnel."

Porter Warren Lauder milk—"I help load and unload luggage, and provide service to passengers in the terminal."

Airplane Cleaner Hencie Francis—"My work helps provide passenger comfort by keeping Mainliners clean and neat."



Now! An Even Bigger, Better Flying Boxcar —The Fairchild Packet C-119

Something new in the air.

Out of the tried and proved first plane ever designed specifically for cargo-carrying has come this latest creation of Fairchild engineers—a super Packet.

Like the original C-82 Packet, the C-119 is a product of close cooperation between Fairchild and the Air Force.

But, with increased payload, speed and climb, the new Packet can transport more men,

more equipment and more supplies than its worthy predecessor. As an ambulance plane it is equipped to carry 36 litter patients and attendants.

This new Flying Boxcar incorporates improvements and modifications proved in thousands of hours of actual service. All in all, it is flying evidence of an air-transportable Army . . . and of Fairchild engineering and research skill.

 **Fairchild Aircraft**

Division of Fairchild Engine and Airplane Corporation, Hagerstown, Maryland



ENGINEERING

Air Conditioning in Planes

An aircraft air-conditioning system capable of extracting 75,000 BTU's per hour has been designed and put into operation by engineers of Glenn L. Martin Co. Installed in a B-29 which is being used as a flying television studio, the system was designed to control cabin and cockpit temperatures which would otherwise range as high as 132 degrees F. due to heat generation from the television equipment.

Weighing 1100 pounds, the equipment is capable of providing air-conditioning for a six-room house. Martin engineers estimate that a future model, to be installed in Martin 2-0-2's, for similar operations, will weigh approximately 600 pounds. Martin adapted Carrier air conditioning units to the B-29 system and are using freon-12, a new refrigerant.

Two 3½ horsepower blowers are used to draw cold air from the bomb bays through the condensers and then dump it overboard. The condensers, along with compressors and receivers are located in the area of the bomb bay. Two additional 1½ horsepower blowers are used to draw warm air from the cabin, through the evaporators where the air is cooled, and back into the cabin.

Weight limitations minimize the possibility of adapting a system of this kind to normal transport aircraft require-



Martin Stratovision Studio—Artist drawing of Martin 2-0-2 shows proposed interior arrangement of Stratovision receiving and broadcasting studio. Heat generated by this equipment will require air-conditioning provisions. Martin and Westinghouse plan on using 60 of these airplanes to operate 14 Stratovision stations in a nationwide network.

ments but the development and research will prove of great value to aircraft designers now working with the problem of cooling aircraft that travel at sonic and supersonic speeds. In a recent lecture Hugh L. Dryden, director of aero-

nautical research for NACA, pointed out that the development of transport aircraft which will travel at high supersonic speeds may well depend upon the ability to control maximum temperatures within the cockpit and cabins.

For Service That Brings Customers Back

SELL MID-CONTINENT AIRLINES' FLIGHTS

CONVENIENT CONNECTIONS WITH 17 OTHER MAJOR AIRLINES

Hundreds of Business Men and Vacationists Prefer M.C.A. Fast, Dependable DC-3 Flights!

CERTAINLY THERE'S NO NEED TO CALL BACK. WE GIVE YOU INSTANT CONFIRMATION OF RESERVATIONS ON MID-CONTINENT AND MOST CONNECTING AIRLINES.

IT'S SMART TO FLY MID-CONTINENT AIRLINES

From Minneapolis to New Orleans, all up and down Mid-America, you'll give your customers top convenience in East-West connections and top time-savings by routing them via MCA.

For instance:

From Kansas City:

to Minneapolis-St. Paul—new non-stop flight; to St. Louis—85 min. Commuter service.

From New Orleans:

to Kansas City—only fast thru flight service; to Shreveport-Tulsa—new Commuter service.

From Houston:

to Tulsa—new non-stop flight; to Minneapolis-St. Paul—fastest service; to Kansas City—new 1-stop thru service.

From Minneapolis:

to St. Louis—new Commuter flights; to Houston—fastest service, no change of planes.

Make Friends With Your Nearest Mid-Continent Representative!

Let him help you use MCA service, to arrange routings that keep customers coming back to you.

Radio Operators Needed

CAA is seeking qualified single men for aircraft communicator jobs to be assigned to the 45 airways communications stations operated by CAA along Alaska airways. Starting salary including the 25% differential for service in Alaska, is \$3,718 per year with extra pay available for work over the 40 hour week and 10% additional for night work. Successful applicants will be eligible for eventual promotion to positions paying up to \$6,540 a year.

Qualifications for communicator applicants include transmitting and receiving international morse code at a minimum speed of 30 words per minute, touch typing at 35 words a minute, and 18 months aeronautical communications experience or an equivalent in education and experience. Veterans are not required to meet the age limits of 18 and 40 years nor the health standards.

Several weeks orientation training at Oklahoma City will be given to successful applicants prior to duty. Applications are being accepted on federal application form 57 forwarded to CAA Aeronautical Center, P. O. Box 1082, Oklahoma City 1, Okla.

Ail Fellowships: Two fellowships aimed to aid young graduate students in obtaining advanced engineering de-



Aerial Explorer— Capt. Les Shaffer of Monarch Air Lines points out to Ray Wilson, executive v.p., where he discovered big waterfalls along Monarch's route in southern Colorado. The waterfalls had never been recorded before and may never have been seen until Shaffer spotted them after Monarch began service.

grees in communications and electronics have been established by Airborne Instruments Laboratory, Inc., of Mineola, N. Y. The two fellowships, one at Massachusetts Institute of Technology

and the other at Stanford University, Calif., will be awarded on the basis of high scholarship with due consideration of the applicant's personality and need for financial assistance.

FOR SALE:

SUPER DELUXE EXECUTIVE DOUGLAS DC-3 - 18 Passengers

Available for Immediate Delivery

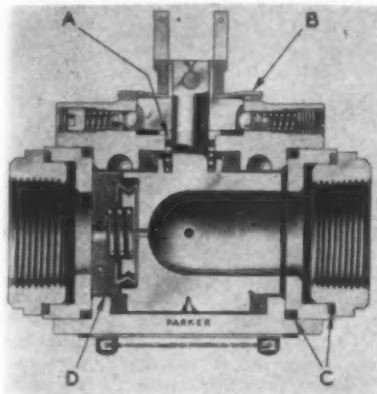
- This beautiful airplane is equipped with Pratt & Whitney engines, Bendix Radio equipment, a refrigerated air conditioning system and is the finest Executive type Douglas DC-3 ever produced.
- If interested, phone, wire or write and pictures and detailed description of this airplane will be forwarded.

AMERICAN FLYERS

Meacham Field
Fort Worth, Texas Phone: 6-7258

Parker Selector Valves

Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, O., has announced the design of an improved pressure bal-

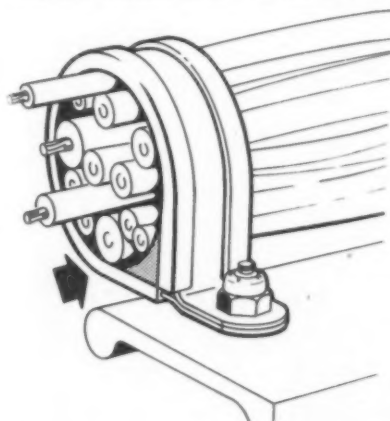


anced fuel selector valve designed for use with aviation fuels but adaptable by use of alternate seals for oil, water, air and vacuum lines. Use of the Mod-4 valve is also possible in high temperature air lines such as used in jet engine applications.

Seals have been designed for leak-proof performance over the 0-50 p.s.i. pressure range from 160 degrees F. to -65 degrees F. Valves are available in sizes from $\frac{3}{4}$ " through $1\frac{1}{2}$ " with as many as six operating positions and with manual or electric actuation.

Electrical Harness Clamp

Thomas Associates, 4607 Alger St., Los Angeles 26, Calif., has placed a new electrical harness clamp on the market.



Principal feature of the TA-710 clamp is the V-shaped wedge of rubber vulcanized to the rubber cushion and providing 360 degree protection of the wire bundle or conduit from chafing. Clamp is .032" 24ST per An-A 13 providing a .032" cushion of synthetic rubber. Clamps are available in I.D. sizes from $\frac{1}{4}$ to 4" in increments of $\frac{1}{16}$ ".

Kollsman Transducers

Transducers, designed to provide an electrical signal which is a function of air speed, altitude, differential and gage pressures, have been placed on the market by Square D Co.'s Kollsman Instrument Division.

The varying resistor type of transducer uses direct current. It is $1\frac{1}{2}$ " x $1\frac{1}{2}$ " x 2" in size and weighs 8 ounces. The Induction type unit used in AC applications weighs 8 ounces and is $1\frac{1}{8}$ " x $2\frac{3}{16}$ " x $1\frac{5}{8}$ " in size. The electrical signal of the induction transducers can be used in conventional synchro-circuits, variable voltage output and phase shift circuits.

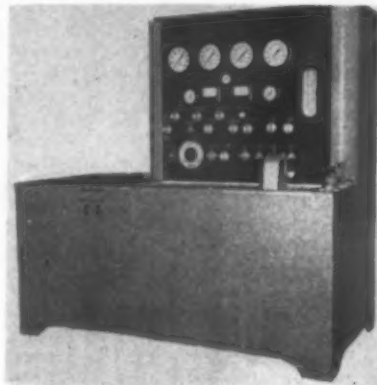
Further details are available from Kollsman Instrument Division of Square D Co., 80-08 45 Avenue, Elmhurst, N. Y.

Voltage Stabilizer

A new series of voltage stabilizers has been introduced by Raytheon Manufacturing Co. for use in electronic equipment where space and weight limitations are critical. These are 5 watt custom built stabilizers for operation at an input voltage of 95-130 volts AC, 60 cycles, single phase, with an output of 120 volts stabilized to plus or minus $\frac{1}{2}$ %. Bulletin VR-6000 describing the voltage stabilizer is available from Raytheon Product Information Office, Waltham 54, Mass.

Hydraulic Test Stand

A new hydraulic test stand powered by a 50 horsepower, three phase electric motor and having a 35 gallon per minute, low pressure pump has been introduced by Pacific Airmotive Corp., 2940 N. Hollywood Way, Burbank, Calif. The stand is designed to test variable and



fixed displacement hydraulic pumps and fixed displacement hydraulic motors.

The new unit, which has a 55 gallon reservoir, provides instrumentation which includes three 6" 0-5000 psi gages, one 6" 0-30 vacuum and 0-160 psi input gage, direct reading flowmeter to 2400 gph and two 0-4,000 rpm tachometers.

FOR SALE

DOUGLAS DC-4 AIRPLANES

—by a
domestic scheduled
air line

- Equipped with P.&W. R-2000-13 (2SD13G) Engines.

- In good condition, having been carefully maintained in accordance with highest standards for scheduled air line service.

- Available for delivery within ten days of date of sale.

These were low-time military transport airplanes, completely rebuilt and modernized for scheduled commercial passenger service. Standard seating arrangement for 50 passengers. Available for immediate inspection.

Complete information, together with a very attractive quotation, available immediately upon request.

Address all inquiries to
P. O. Box No. 1368
Grand Central Station
New York 17, N. Y.

La Guardia Drops to 2nd:

Chicago Busiest for Airlines

La Guardia Airport, long the busiest airline terminal in the U. S., lost top position to Chicago in the first six months of 1948, according to Civil Aeronautics Administration figures compiled from reports by control towers at the airports.

Chicago Municipal Airport was the busiest of the 25 leading commercial fields during the six-months period, with 65,955 air carrier landings and take-offs. This represented 66.2% of total landings and take-offs by all types of aircraft at the field. La Guardia trailed with 60,204 air carrier operations, comprising 82.3% of total activity.

The fact that some airline traffic into the New York area had been diverted to Newark from La Guardia to prevent undue congestion at the latter field figured only slightly in La Guardia's loss of first place to Chicago Municipal. Newark's air carrier landings and take-offs increased only about 5,500 the first six months of this year over the last six months of 1947, whereas La Guardia's airline plane movements fell off to the extent of 13,700. The drop at Chicago was only about 4,300.

For the entire 25 fields, landings and take-offs of air carrier aircraft totaled 776,235, or 34.5% of total aircraft movements. The airline activity was down about 3% from the 801,768 landings and take-offs of the previous six months.

Air carriers operations on and off the 142 airports where CAA control towers are located totaled 1,527,934, which was 16.4% of the 9,294,392 landings and take-offs by aircraft of all types during the six-months period. Itinerant military aircraft movements totaled 305,125, or 3.1% of the total, and local military aircraft landings and take-offs numbered 752,378, or 8.1%.

Itinerant civil flying accounted for another 1,123,171 landings and take-offs, or 12.1% of the half-year total, while local civil flying at the 142 airports comprised 60.1% of total aircraft movements, with 5,585,784 landings and take-offs.

NAL Signs for Idlewild

The domestic airlines had hoped to hold a united front in refusing to negotiate with the Port of New York Authority for space at New York Inter-

national Airport pending settlement of their dispute with the Authority over leases, but a little over two weeks ago the front was breached.

National Airlines signed a lease for 17,500 feet of hangar space, about 200 square feet of counter space and about 250 sq. ft. of office space at the new airport, becoming the first U. S. carrier to sign for space at International under the terms set up by the Port Authority.

National explained that it had been unable to obtain adequate facilities for the servicing of its aircraft at Newark Airport, through which it has been serving the New York area, and that it was not considered advisable or possible to go through another winter handling maintenance outside on the ramp at Newark. Furthermore, it was pointed out, National was planning the early inauguration of non-stop service between Havana and New York and would require customs and immigration services which would not be available at Newark but would be at N. Y. International.

Other U. S. carriers, faced with no such problems, gave no indication of signing new leases on the Port Authority's terms.

Aid for Private Airports

The New Hampshire plan for bringing privately owned airports into a state airways system so as to make them eligible for state and local funds for development and maintenance may be recommended to a considerable number of the 44 state legislatures which meet next year.

Harry Meixell, executive director, National Aviation Trades Association, will recommend to the annual meeting of NATA in Cleveland Nov. 15-17 that state chapters of the association give consideration to such a legislative program.

NATA recently completed a survey showing that of the 4,943 civil airports in the United States, on May 1, 2,919 or 59% are privately owned. Aside from purely commercial considerations, these privately owned airports mean much to the safety of flying, Meixell stated. Each is in reality an emergency landing field. This gives them some degree of public importance. But almost without exception, the private airport owner has had to pay all of the development and maintenance expenses out of his own pocket.

The New Hampshire plan is now one year old. It is embodied in the state's Aeronautical Law which became effective Sept. 1, 1947. Section 12 entitled "State Airways System," states: "The state airways system is hereby declared to consist of all air navigation facilities available for public use now existing or hereafter established, whether publicly or privately owned and whether natural or man made, except those

Aircraft Operations at 25 Leading Airports*

1948 Ranking	Jan.-June, 1948		July-Dec., 1947	
	Air Carrier Operations	% of Total Operations	Air Carrier Operations	% of Total Operations
1. Chicago (Mun.)	65,955	66.2	70,292	64.4
2. La Guardia	60,204	82.3	73,995	83.1
3. Washington	53,380	71.1	53,562	68.6
4. Los Angeles	39,347	50.4	38,232	44.3
5. Detroit	38,618	74.6	36,757	81.8
6. Miami	37,995	41.3	38,541	42.0
7. San Francisco	37,098	56.6	38,323	48.6
8. Cleveland	36,065	15.5	35,719	11.6
9. Pittsburgh	35,793	57.9	34,743	52.0
10. Dallas	31,609	53.6	34,001	52.9
11. Kansas City	31,378	25.8	30,613	24.3
12. Newark	30,519	52.6	25,958	46.6
13. Boston	27,830	56.6	30,320	62.5
14. Philadelphia	27,668	68.3	30,258	71.7
15. St. Louis	26,076	28.7	26,049	29.8
16. Atlanta	23,876	12.7	25,593	11.1
17. Denver	22,903	23.6	22,574	20.8
18. Cincinnati (Covington)	21,995	39.8	21,989	37.1
19. Jacksonville	21,176	41.3	26,229	51.3
20. Oakland	20,858	17.4	18,865	15.3
21. Burbank	19,043	28.7	17,390	23.8
22. Indianapolis	17,442	11.2	18,959	11.6
23. Minneapolis	16,871	13.1	16,176	10.8
24. Baltimore	16,343	25.7	17,474	20.7
25. Portland	16,200	27.5	19,156	51.2
Total	776,235	34.5	801,768	32.6
Total for all 142 CAA towers for six months	1,527,934	16.4	1,522,142	16.3

*Landings and take-offs.



GOING UNDERGROUND FOR A "WHIRL"

► This aircraft turbine wheel is about to undergo a "whirl test"—a test to prove its ability to survive the tremendous centrifugal forces present while it spins at supersonic blade tip speeds.

The test is conducted in an underground chamber from which the air is evacuated. This permits the wheel to whirl at higher speeds than required in service . . . for if the blades had to push air around at such speeds, enormous power would be required to drive the wheel. To detect any slight irregularity that might occur during the run, the test rig has an electronic indicator.

► Because some experimental parts are whirled to destruction to determine how much overspeed they can endure, the chamber is lined with laminated boiler plate—12 inches thick.

► Each newly designed turbine wheel, compressor, and supercharger impeller must prove its ruggedness in similar tests in the Wright Aeronautical research laboratories before being released for production.

► Another example of the painstaking research behind the development of Wright aircraft turbine and reciprocating engines.



POWER FOR AIR PROGRESS

WRIGHT

Aeronautical Corporation • Wood-Ridge, New Jersey

A DIVISION OF
CURTIS-WRIGHT
FIRST AIR FLIGHT

CREATIVE ENGINEERING



TEST CELL NO. 8

Torture test for

high-speed wheels **vital to the super jets!**

Mouth on intercom... ears tuned to screaming sound—an AiResearch engineer adjusts the tornado speed of rotors in a magic AiResearch midjet turbine.

Hour after hour the torturing test goes on; because there must be no failure when this turbine is finally installed on the sensational new North American F-86 jet fighter.

Pioneering the design and manufacture of refrigeration turbines, heat exchangers, and superchargers to pressurize and air condition the new jets and high-altitude transports has been the basic job of AiResearch for nearly a decade. This has called especially for new techniques in building and controlling high-speed wheels and rotors—often operating in excess of 100,000 r.p.m.

So vital is this equipment now being installed on a majority of new military and commercial aircraft, that 30% of the great AiResearch plant is devoted to testing and research laboratories.

• Today these unusual laboratory facilities... the engineering "know-how"... and the manufacturing skills of AiResearch are available to you—whatever your field may be.

AiResearch engineers invite your toughest problems, involving high-speed wheels and rotors. Specialized experience is also available in creating compact turbines and compressors; actuators with high-speed rotors; air, gas and fluid heat exchangers; air pressure, temperature and other automatic controls.

Write: AiResearch Manufacturing Company
Los Angeles 45, California



AMERICAN AVIATION

under the jurisdiction of the federal government.

"It is hereby declared that jurisdiction over the state airways system is vested in the commission and that expenditure of state funds in the interest of safety on any or all of the facilities of this system serves a useful public purpose and satisfies a public need. The commission shall prescribe the terms and conditions of the activities authorized for each such facility."

In general, this provision is interpreted to mean that when a private owner makes his airport available to public use on equal terms to all he has touched the public interest and as such is eligible to receive public funds from state, county and municipal governments with powers to levy taxes.

Indirect Federal Benefits. The private owner does not surrender title or interest in his airport. Of course he is not eligible to receive Federal airport funds. But in the case of New Hampshire, he will receive indirect benefits from Federal funds spent there.

This is because under state law, Federal funds for airport development must be channeled through the New Hampshire Aeronautics Commission. While Federal funds may be allocated only for specific projects relating to publicly owned airports, it is apparent that in whatever degree Federal money relieves obligations on state and local treasuries for airport development, there will be that much more to spend on the private fields.

The New Hampshire Aeronautics commission recently adopted a policy of making funds available from the airways toll, collected from a 4c a gallon gasoline tax, for Class 1 and System 1 airports registered with the commission. It also approved a New Hampshire NATA proposal that appropriate legislation be drafted which would permit the protection of the aerial approaches to private airports available for public use. Legislation also will be drafted to relieve the operator of a private airport of real estate taxes on the landing area. Buildings would not be included in this exemption.

Offer Made for ATC

The idea behind formation of the Airlines Terminal Corporation had been a good one, but the performance to date of ATC and its now dissolved subsidiary, Airlines National Terminal Services Corp., had been unsatisfactory to the airlines. Last fortnight, the airlines were presented with an opportunity to start anew.

C. Phillips, Jr., president of Airways Engineering Consultants, of Washington, and Sam J. Solomon, onetime head of Northeast Airlines and long a prominent figure in aviation, offered to acquire a majority stock interest in the terminal corporation and expand its activities on a nationwide scale. Under terms of the charter, ATC can lease and operate airports, offer ramp facilities



PAA Waiting Room—Passenger comfort is the theme of the new Pan American Airways terminal building at Miami, Fla. In addition to providing adequate space for latest innovations in ticketing procedures, there is also ample space in the waiting room furnished with restful seats. The terminal is part of project undertaken by PAA at cost of \$150,000 to relieve crowded conditions at Miami International Airport.

and engage in all types of airport activities.

The two men proposed that the airlines retain a minority interest in the

reorganized corporation and be represented on the board of directors. The Air Transport Association, representing the airlines, is studying the offer.

Now All Cargo Planes

Increasing National Airlines services, with the addition of **ALL CARGO** C-46's is our latest contribution to the Merchants Manufacturers and shippers of the 31* cities located in the twelve States, District of Columbia and Cuba regularly served by NATIONAL AIRLINES.

PASSENGER-MAIL-EXPRESS-CARGO

*Including the three new cities of Richmond, Va., Panama City, Fla. and Baltimore, Md., added on September 1st.

Subjects are arranged as airlines segregate their departmental functions:

Contents:

- Historical Summary
-
- Airline Organization
-
- Aircraft and Engines
-
- Operating Costs and Revenues
-
- Utilization and On-time Operation
-
- Fundamentals of Flight and Performance
-
- Takeoff, Climb and Ceiling Performance
-
- Cruise Control Methods
-
- Full Load Requirements
-
- Weight and Balance Problems
-
- Airports and Airways
-
- Passenger Service
-
- Communications and Meteorology
-
- Maintenance and Engineering
-
- Cargo Operations

about the Author:

R. DIXON SPEAS, graduate in aeronautical engineering from M.I.T., recognized industry-wide as one of the experienced top authorities in airline transportation. Speaker, author and executive of American Airlines.

**NOW! a practical, complete, authoritative
new textbook in the Air Transportation field!**

AIRLINE OPERATION

by R. Dixon Speas



The ideal text and reference work for:
AIRLINE TRAINING PROGRAMS
STUDENTS—SCHOOLS—LIBRARIES
AIR TRANSPORTATION PERSON-
NEL — PILOTS — OPERATIONS
COMMUNICATIONS and ALL
PEOPLE in the AIRLINE and
RELATED INDUSTRIES

\$5 per copy Discounts on
quantity orders

AIRLINE OPERATION offers you a readable, well coordinated, practical work. Thoroughly, comprehensively and factually, it covers the entire scope of the intricate air transportation system. Complete and informative, it is simplified for student use—practical for training programs—progressive and usable for air transportation veterans. You will find it vital toward a greater understanding of Air Transportation, your position or the position you hope to occupy.

Mail your order today to:

American Aviation Publications

1025 Vermont Avenue, N.W.

Washington 5, D. C.

AMERICAN AVIATION

Passengers Down, Cargo Up:

Int'l Load Factors at 56%

By KEITH SAUNDERS

The pattern of U. S. international airline traffic for the first six months of 1948 was strikingly similar to that of the domestic carriers: passenger load factors were down but freight and express volume had reached an all-time high.

The 12 international carriers filing traffic reports with the Civil Aeronautics Board flew 867,691,000 revenue passenger miles the first half of this year, an increase of 8.6% over the 799,044,000 passenger miles flown by 10 reporting airlines in the first six months of 1947.

This increase was not due to more passengers, however. It was due to a 17.8% increase in available seat miles flown and to a 22% increase in revenue plane miles flown as a result, largely, of Colonial Airlines' inauguration of service to Bermuda, Northwest's extension beyond Alaska to the Orient, and Braniff's opening of its Latin American route last June 4. All of this added up to 46,403,111 plane miles being flown by U. S. international airlines through June 30 this year, compared to 39,512,201 in the same period last year, and to 1,537,972,000 available seat miles as compared to 1,305,300,000.

There were fewer passengers: 651,359 this year, as against 658,601 in the first half of last year, a drop of 11%.

No Consistent Trend. With respect to individual carriers, the record was spotty, the passenger traffic of some being up, that of others down. American Overseas' volume was down by about 2,000 passengers and 5.5 million passenger miles. TWA had an increase of about 7,000 passengers and 15 million passenger miles. National Airlines' volume was down, possibly due to effects of the pilot's strike.

Pan American Airways had about a 20 million passenger miles slump on its Latin American Division and a small drop in passenger volume on its Alaska operations, but showed increases in passenger miles flown on the Atlantic and Pacific divisions.

Average passenger load factor of all the carriers for the first six months of 1948 was 56.4%, as compared to an average of 61.2% in the same period last year. Availability of an additional 200 million seat miles this year accounted for the load factor drop.

Aside from passengers, the international traffic picture was bright. Volume of U. S. mail carried was up from 5,993,793 ton miles to 7,311,298; foreign mail volume was up from 1,315,634 to 1,570,755; express ton miles were up 29%, from 13,741,453 to 17,794,096; and freight was up 180% from 869,610 to 2,440,597 ton miles. (See page 46 for tabulation of January-June traffic operations.)

Not reflected in any of the above fig-

ures was an entirely new type of traffic—international air parcel post—which was introduced only last Mar. 15. From then through June 30, the reports show, AOA flew 47,477 ton miles of parcel post to European points, TWA flew 91,936 ton miles, PAA's Atlantic Division (inclusive of Bermuda) flew 51,903 ton miles, and Colonial flew 297 ton miles of parcel post to Bermuda.

DC-6 Ride for \$2.50

On the theory that a good way to sell people on air travel is to make available to them at little expense an opportunity to ride in a new luxury transport plane, American Airlines currently is operating 30-minute DC-6 excursion flights at \$2.50 per head at several key points on its system.

The idea stems back to prewar days, when several airlines ran free courtesy flights to introduce people to flying. The charge now being imposed just about covers direct costs.

According to AA the idea is working out well, both for public relations and sales promotion. It was first tried in Boston, where on two week-ends more than 1,600 persons grabbed up the DC-6 excursion offer. On the first Sunday the flights were made in Los Angeles, more than 350 passengers boarded the seven flights that were operated. Similar interest has been displayed in Dallas and Chicago, and it is now planned to operate the excursion flights at all points where DC-6's are available on Saturdays and Sundays.

What American likes about the idea is its traffic-stimulating possibilities. Over 90% of those taking the flights in Boston were first riders, and the comfort and luxury of the DC-6 gives such passengers a most favorable impression of air travel and dispels apprehensions they have entertained as a result of misinformation and scare headlines.

And for those who have flown before but have never flown in the pressurized 300 mph DC-6, the flights stimulate a keener appreciation of air travel, which should react to the benefit not only of American Airlines but of all scheduled air carriers.

Plane Liked for Long Trips

Sales executives use trains more frequently than any other form of transportation for business travel, but for short trips they find the automobile more enjoyable and for long trips prefer to travel by air.

These were some of the facts gleaned from a survey made in August issue of *Sales Management* magazine by National Analysts, Inc., of New York. The survey polled travel habits of 221 sales executives in New York, Chicago, Philadelphia, Cleveland and San Francisco, and showed that 95% of them travel in connection with their business, averaging 16,500 miles of travel per year.

The survey showed the airplane as the transportation medium most frequently used by 65% of those polled.

When polled on the basis of enjoyability of travel, their preferences were as follows:

	Short Trips	Long Trips
Cars	46%	4%
Chair car or Pullman	41%	47%
Planes	14%	51%

Percentages add up to more than 100%



Ticketing Partnership—In belief that consolidated ticket offices do not stifle inter-company promotions and take away incentive of employees, Western Air Lines and Capital Airlines share common sales quarters at corner of 7th and Marquette, Minneapolis, Minn. Such consolidation has proved one means of cutting ground costs.

TRAFFIC & SALES

because some persons gave more than one answer.

Preferences ran about the same when called for on the basis of economy, rather than enjoyability, although the percentage favoring planes for long trips went up to 56% while the percentage favoring chair car or pullman for long trips dropped to 37%.

Averaging both users and non-users together the average mileage was:

Cars	2,800
Train	7,200
Plane	7,000

With non-users eliminated, the averages show:

Car	4,700
Train	8,200
Plane	10,800

WAL's Photo Contest

In connection with the photographic contest it is sponsoring through Dec. 1, Western Air Lines has equipped each of its new Convair-Liners with a General Electric PR-1 exposure meter to aid passengers in recording scenes of interest on their trips, both aloft and on the ground.

Stewardesses have been trained to instruct passengers in the operation of the new meter.

The photographic contest has been divided into two divisions, one for black-and-white and the other for color photos. Prizes for the best photos submitted in the two divisions will include trips over the Western Air Lines system, radios, luggage, clothing and PR-1 exposure meters.

MATS Hiring Traffic Men

The Military Air Transport Service has decided to hire experienced civilians to fill the newly created post of deputy director of traffic at principal bases in U. S., Hawaii, and Alaska. About 20 jobs are involved at outset, with salaries ranging between \$4,500 and \$7,200 a year (Civil Service ratings CAF-9 to CAF-12).

The new deputy directors will be permanently assigned to a base, and will not be subject to transfer. Top traffic job at each base will still be assigned to an officer, but it is expected that the civilian will carry much of responsibility for efficient traffic handling. Previous military experience is a requirement.

Application can be made by obtaining two copies of Form 57 from any Civil Service office and mailing to Deputy Director of Traffic, Headquarters, Military Air Transport Service, Washington 25, D. C.

Traffic Institute: The American University, Washington, D. C., will conduct an Institute of Industrial Transportation and Traffic Management Nov. 2-23. It will be directed by Prof. L. M. Homberger. The faculty will include representatives of government agencies and national organizations, as well as general traffic managers and other executives in traffic management.

PASSENGER SERVICE

Visitors in Cockpit?

Should airline captain-pilots be permitted to invite passengers into the cockpit for a look-see while in flight, as steamship captains invite passengers on the bridge?

At least one airline head thought this would be a good thing from the public relations angle, but to permit such visits to the cockpit would require a modification of present operating rules and CAB regulations. To find out what airlines think about the matter, so it would know whether to ask for the required modifications, the Air Transport Association is currently conducting a poll of airline managements.

Proposal under consideration is that

invitations to visit the cockpit for short periods of time would be at the discretion of the airline captain in charge.

Slumber-Seats: British Commonwealth Pacific Airlines now features "Slumber-Seats" on its DC-4's flying between Australia and San Francisco. During the day, the seat is similar in type to that normally fitted to DC-4's, with the additional feature of an adjustable leg-rest. At night, it becomes a fully reclining lounge, enabling passengers to stretch out in full length comfort.

Purser Added: SABENA Belgian Airlines now carries a purser, in addition to the steward and stewardess, on all its trans-Atlantic DC-6 flights. Purpose is to furnish the maximum of quick food and other service to passengers.

Kleefuss Wins CAL Passenger Service Award

Herbert Kleefuss takes his duties as station agent for Continental Air Lines at Santa Fe seriously. In addition to his many station duties, Kleefuss was largely instrumental in selling city officials on the idea of providing a fine terminal building at the airport; he fought for limousine service until it was provided; he occasionally drove his car to Albuquerque to pick up passengers who could not be landed at Santa Fe.

For these and other acts "beyond the accepted routine of good service" Kleefuss recently received the first Passenger Service Award "in recognition of outstanding performance in rendering service to Continental Air Lines passengers." The award was made in ceremonies at Denver attended by a number of Continental

officials including C. C. West, Jr., executive vice president; O. R. Haueter, vice president in charge of operations, and Lynn Dennis, director of flight service.

Kleefuss started his career in Santa Fe over 10 years ago, at a time when station managers were chosen primarily for their operational ability. He accepted these duties, but at the same time was able to foresee what would be expected of the airline station manager of the future.

"His entire record," said the presentation board, "reflects an innate sincerity, integrity and a fundamental simplicity which is hard to match. This is evident in everything he does, and everyone—passengers, management and fellow employees—benefits from it."



RECOGNITION FOR OUTSTANDING service to passengers was given recently to Herbert Kleefuss (right), station manager for Continental Air Lines at Santa Fe, N. Mex. Attending the ceremony (left to right) were C. C. West, Jr., executive v.p., Lynn Dennis, director of flight service, and O. R. Haueter, v.p.-operations.

Airlines File 1947 Salary Reports with CAB

The Civil Aeronautics Board has received Schedule E reports, showing officers' and directors' salaries for the following airlines during calendar 1947.

Monarch Air Lines

	1947 Salary	Change from 1946
H. S. Darr, pres. ....	.....	.....
R. M. Wilson, exec. v. p.	\$ 9,000	.....
C. A. Myhre, treas.	4,900	.....
E. N. Levin, secy. ....	.....	.....
D. T. Myers, asst. secy.	1,690	.....

Los Angeles Airways

	1947 Salary	Change from 1946
C. M. Belinn, pres. and dir.	\$12,000	.....
R. A. McDonald, asst. secy. and treas.	2,275	.....
C. H. Tanner, v. p. and dir.	No salary listed	.....
Martin J. Burke, secy. and dir.	No salary listed	.....
Wayne H. Fisher, treas. and dir.	No salary listed	.....

Trans-Texas Airways

	1947 Salary	Change from 1946
Richard Earl McKaughan, pres.	\$18,362	.....
Lidney D. McKaughan, v. p.	2,642	.....
James V. Allred, v. p.	2,835	.....
Robert O. Parker, secy. and treas. (acting)	3,191	.....

NOTE: Allred's salary is in nature of legal retainer.

West Coast Airlines

	1947 Salary	Change from 1946
Nick Bez, pres. and dir.	\$ 6,000	.....
H. A. Munter, v.p. and dir.	12,000	.....
G. R. Cook, v.p. and dir.	9,600	.....
William Calvert, v.p. and dir. ....	.....	.....
W. A. Castleton, secy-treas. and dir.	4,800	.....

TWIN ENGINE BEECH BARGAINS

- Post war D-18-S, one owner, Engines 100 hours S. O. H. Hydromatics—\$47,500
- Allocated C-45, well equipped, Engines low time S. O. H. \$27,000
- Converted AT-11, 5 Chairs, Beautiful condition, \$18,000

SOUTHERN AIRWAYS

Atlanta, Georgia
CALhoun 7761

Promotion Films

Rickenbacker Starred: Eastern Air Lines this month gave its semi-documentary color movie, "Air Power Is Peace Power," one of biggest sendoffs ever accorded a commercial film. Formal premiere was in Hollywood, Sept. 8, two weeks after a special military premiere for defense chiefs in the Pentagon, Washington. On Sept. 13, the film was returned to Washington for a showing before 600 government and aviation leaders following a buffet dinner.

Filmed by Jerry Fairbanks Productions and starring Capt. Eddie Rickenbacker, the movie will be shown before clubs, luncheon groups, veterans' organizations, military posts, schools and conventions. Plans also are being made for its telecasting.

PAA & Mexico: A new travel film covering Mexico and Guatemala is now being offered without charge for showing before civic groups, clubs and similar organizations by Pan American Airways. It is a 30-minute sound-color movie, seventh in a series of PAA-produced travelogs. An eighth film, on Hawaii, is now in production.

Colonial & Bermuda: A comprehensive color movie on Bermuda has been released by Colonial Airlines as first of a series of 30-minute color-sound films designed to promote travel to resort stops. The 16 mm. film will be made available for showing at clubs, churches, schools, business associations and municipal functions after being shown to Colonial's sales staff and travel agents. Future films will deal with Saranac Lake, Glens Fall, Burlington and Canadian points.

COMPUTES AND RECORDS THE SALE



INVESTIGATE

Wayne *airplane*

REFUELING SYSTEMS

★ COMPUTING CABINET TYPE

THE WAYNE PUMP CO., FT. WAYNE 4, IND.

Aircraft TOOLS

ANGLE DRILLS

FOR THOSE HARD-TO-REACH SPOTS 18 SIZES AND MODELS

Exclusive Thumb-Pad gives worker comfort and safety plus better tool control. Drive shafts and spindles are precision-built of heat-treated tool steel for long, trouble-free service. Lubrication of radial ball bearings and all parts simplified to one quick operation. Every tool factory tested and broken in.



AT-312
360° Flex Drive



AT-300
90° Direct Drive



AT-301
45° Direct Drive

Aircraft TOOLS, INC.

2306 E. 38th Street, Los Angeles 11, Calif.

Manufacturers of all types of aircraft fabricating and maintenance tools.



Write Today
For Catalog!

U. S. International Airline Traffic for January-June

AIRLINES	REVENUE	PASSENGERS	REVENUE	PASSENGERS	AVAILABLE SEAT MILES	LOAD FACTOR	U. S. MAIL TON-MAILES	FOREIGN MAIL TON-MAILES	EXPRESS TON-MAILES	FREIGHT TON-MAILES	TOTAL TON-MAILES	REV. TRAFFIC TON-MAILES	AVAILABLE TON-MAILES	% AVAILABLE	REVENUE	PLANE-MILES	SCHEDULED MILES	% SCHEDULED
American	31,614	23,302,000	42,289,000	55.1%	40,616	14,765	772,925	3,335,142	6,844,996	46.7%	1,110,977	1,161,362	92.0%					
Amer. Overseas	27,427	70,437,000	126,194,000	55.0%	657,076	109,086	890,308	9,311,831	16,559,072	56.2%	3,334,238	3,525,051	93.6%					
Braniff	288	446,000	3,407,000	13.0%	772	...	...	46,555	483,115	9.6%	69,544	69,544	100.0%					
C & S	5,722	3,920,000	11,067,000	35.4%	724	...	...	30,868	450,098	1,229,773	36.6%	245,915	249,348	98.6%				
Colonial	9,483	7,450,000	14,875,000	50.0%	3,769	833	...	31,799	845,983	1,778,309	47.5%	343,035	335,596	97.8%				
Eastern	7,945	8,256,000	21,010,000	39.2%	21,228	...	...	200,408	1,103,113	2,638,214	41.8%	376,600	376,560	99.4%				
National	10,776	3,348,000	8,423,000	39.7%	6,087	...	107,295	456,157	1,306,213	32.9%	183,207	188,980	96.4%					
Northwest	12,693	27,189,000	50,427,000	53.9%	567,392	104,646	23,576	4,133,230	7,553,097	54.7%	2,110,866	1,995,148	94.0%					
Panama	47,444	52,802,000	86,846,000	60.7%	99,462	135,906	778,508	6,855,211	11,619,251	57.9%	2,836,202	2,906,385	93.9%					
Pan American	343,751	272,518,000	526,272,000	51.7%	1,336,584	365,734	8,762,322	697,251	39,258,727	74,771,101	52.5%	14,455,177	14,547,983	97.7%				
Latin Amer.	56,441	132,674,000	203,821,000	65.0%	1,230,310	294,229	2,355,381	121,969	18,632,861	31,824,991	58.5%	6,270,670	6,146,120	94.0%				
Atlantic	41,689	127,380,000	184,468,000	69.0%	1,790,433	74,447	1,777,609	145	16,357,254	26,268,085	62.2%	7,434,793	7,310,689	99.3%				
Pacific	14,486	14,627,000	36,708,000	39.8%	186,209	...	1,179,634	...	2,870,520	5,986,758	47.9%	1,212,215	1,216,822	96.2%				
Alaska	33,181	103,138,000	188,924,000	54.5%	1,177,320	471,109	1,856,739	15,062,422	27,781,857	54.2%	5,541,272	5,467,641	98.2%					
TWA	8,419	20,204,000	33,181,000	60.8%	185,308	...	62,732	2,331,169	3,629,745	64.2%	878,400	873,600	99.4%					
United	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	651,359	867,691,000	1,537,972,000	56.4%	7,311,298	1,570,755	17,794,096	2,440,597	121,050,273	220,554,777	54.8%	46,403,111	46,372,781	97.1%				
* International Parcel Post Ton-Miles for Six Months: American Overseas 47,477; Colonial 297; PAA Atlantic Div. 54,903; TWA 91,936																		
** Began operations June 4, 1948																		
NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to Havana; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient; and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.																		

U. S. Feeder Airline Revenues & Expenses for January-June

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	\$ 476,123	\$...	\$ 470,290	\$ 5,408	\$...	\$...	\$...	\$ 538,126	\$ 296,067	\$ 242,059	\$ -62,083
Challenger	Figures not yet available	Figures not yet available	Data will be reported at a later date.	...	...	...	...	...	...	...	...
Empire	398,192	93,766	301,176	716	...	653	968	425,965	214,744	211,221	-27,773
Florida	221,366	46,754	171,512	947	...	302	483	346,127	171,033	175,094	-124,761
Monarch	575,587	137,769	424,770	2,383	8,305	731	...	707,162	365,671	341,491	-131,575
Piedmont*	420,990	137,628	279,231	1,712	851	1,167	...	454,707	232,427	222,280	-34,117
Pioneer	1,201,511	535,943	622,123	3,174	3,995	3,024	6,863	1,174,712	613,346	561,366	26,799
Southwest	1,085,229	348,895	717,357	4,067	10,721	1,859	1,095	1,081,020	562,563	518,458	4,208
Trans-Texas	770,942	71,271	695,463	2,599	1,117	273	...	514,724	253,090	261,634	256,219
West Coast	521,591	205,120	315,743	2,333	...	573	216	616,409	292,182	320,228	-90,818
W. Central**	175,997	28,489	144,801	1,495	...	297	...	240,118	106,103	134,015	-64,120
TOTALS	5,847,128	1,605,635	4,142,466	24,843	24,969	8,879	9,625	6,099,070	3,107,226	2,987,846	-247,941
Los Angeles	171,139	...	171,139	...	Helicopter Mail Service	...	...	148,134	94,125	54,009	23,005

* Began operations February 20, 1948.

** Began operations February 24, 1948.

U. S. Feeder Airline Revenues & Expenses for April-June

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	\$ 255,949	\$...	\$ 252,030	\$ 3,572	\$...	\$...	\$...	\$ 274,317	\$ 150,359	\$ 123,958	\$ -18,368
Challenger	Figures not yet available	Figures not yet available	Data will be reported at a later date.	...	...	...	...	...	...	...	...
Empire	275,345	69,784	209,694	417	...	451	121	210,742	106,518	104,224	64,603
Florida	113,041	29,054	82,143	609	...	171	483	177,793	89,152	88,641	-64,752
Monarch	319,097	91,400	221,348	1,467	4,965	432	...	357,356	196,811	160,545	-38,239
Piedmont	373,382	122,680	247,141	1,712	833	1,016	...	374,108	203,997	170,511	-726
Pioneer	726,529	341,895	360,952*	1,770	2,784	2,033	1,117	646,647	347,291	299,357	79,882
Southwest	545,551	209,584	325,023	2,260	5,748	1,151	843	571,019	304,315	266,704	-25,468
Trans-Texas	551,670	45,912	502,411	2,249	901	97	...	276,652	139,946	136,706	275,018
West Coast	327,829	129,867	197,541	1,278	...	343	...	337,255	168,952	168,303	-9,426
W. Central	142,853	25,178	115,598	1,252	...	272	...	178,008	82,463	95,525	-35,155
TOTALS	3,631,246	1,059,354	2,513,881	16,586	15,231	5,966	2,564	3,403,897	1,789,424	1,614,474	227,349
Los Angeles	119,589	...	119,589	...	Helicopter Mail Service	...	...	80,248	51,474	28,775	30,341

* Revenue from transportation of mail has been accrued at the rate in effect March 11, 1948, including revenue applicable to both Texas and New Mexico routes; adjustments will be made upon receipt of new rate.

NOTE: Under CAB filing procedures, the airlines file a cumulative quarterly financial report for April-June in place of a separate statement for the month of June. Traffic data, however, are reported separately for each month.

Mass Bankruptcy Threatens Under Perverse VA Policy

Any conversation these days among fixed base operators, or about the personal flying business, centers around the gloomy assumption that soon there won't be anyone left in the business unless the Veterans Administration quickly shifts its current policy on approval of applicants for GI flight training.

Whether or not it was good business, almost every fixed base operator in the country let GI flight training become the backbone of his business. Most of them have known that it couldn't last forever and that they should be out cultivating other sources of revenue, but few of them have been able to be independent of GI training support.

Since the first of July this source of revenue has been virtually cut off for most operators. The Veterans Administration, under fire for spending public funds for all sorts of nonsensical training, now seeks to protect itself from such criticism by requiring the would-be student to prove beyond all doubt that training is essential to his future employment.

Congress, which did some of the sniping at VA, nevertheless did not intend in writing the new budget that GI flight training should be denied to all but a few of the most obviously eligible applicants. Neither did it intend that applicants should have to wait for weeks or months while VA reviewed their eligibility.

VA Adamant. At least this is the interpretation of fixed-base interests. VA Administrator Carl Gray has taken a much stricter view of his responsibilities and has shown no tendency to give in to charges that he is violating the wishes of Congress.

In admitting that action was withheld on 1,551 out of 2,220 applications filed during July, VA said this was due to the fact that veterans had misunderstood the new regulations set by Congress and had failed to file necessary information about their need for flight training.

Flight school operators, anxious to keep their equipment and personnel busy, have more than made up for any lack of initiative on the part of the applicants toward pushing papers through VA regional offices.

In some states there have been a modest number of approvals; in other states virtually none. In areas where VA is requiring exhaustive proof of need for training, plus plenty of time for investigating, the applicant may well lose interest and the operator can do little but plead with local VA officials and go home and count his mounting losses.

Washington Holds Key. The answer lies not in the local offices but in Washington. The quickest remedy, from the viewpoint of the operator, could come in the form of an order from Veterans Administrator Gray to VA field offices saying they should approve flight training, without prolonged delay, for any applicant who submits an affidavit that he considers such training necessary to improve his occupational position.

Operators know they cannot expect a return to the volume of business enjoyed when almost any veteran who wanted to fly was considered eligible. But they also know that they must have trainees and have them soon if they are to remain in business.

Despite the pleas of operators and the plugging of such organizations as NATA, VA headquarters does not seem inclined to relax its position. Although certain Congressmen have made it known that they consider VA to be overstepping its instructions, Congress is not likely to meet for reconsideration of the matter, barring another special session, until January.

Bankruptcy Staring. Most operators say they will be bankrupt by January

unless something is done to speed approval of applications for training. Just what should be done, and by whom, is today's biggest question.

There has been considerable talk of court action against the Veterans Administration to force compliance with the so-called intent of Congress. Such action might be brought by an individual operator, or by a group of operators, or by an applicant for training whose application had been denied or delayed despite good evidence of need for training.

The veterans organization, AMVETS, passed a resolution at its recent convention in Chicago condemning VA and offering its support to any action which might be brought to force VA to rescind or relax its instructions to regional offices.

Short of court action, just about every possible attempt has been made to show VA that flight training activities are essential to the national and local welfare, that early bankruptcy faces literally thousands of operators, and that only a reversal of present VA policy can save them.

Thus far VA has not been impressed to a point of reversing or even helpfully modifying its position. If a majority of the schools are to remain in business, even temporarily, they must have still stronger action from within their own ranks plus even greater support from everyone concerned with the general welfare of aviation.

Air Taxi Service Begins

More than 400 fixed base operators located in 347 communities of the United States embarked on the National Aviation Trades Association air taxi program on Sept. 1 in a nationwide move to provide what the association describes as a true feeder service in air transportation.

Simultaneously with start of the service, NATA issued a roster of the 432 fixed base operators who are presently eligible to participate in the program. A new roster will be issued Jan. 1 at which time the number is expected to total more than 1,000.

NATA requires that the operator be a member of a state NATA chapter and that he hold both the Operating Certificate under Part 42 of the Civil Air Regulations and a Letter of Registration to serve as a Non-Certificated Irregular Air Carrier in accordance with revised Section 292.1 of CAB's Economic Regulations.

There are 1,271 operators now qualified under Federal regulations.

Insurance Coverage. Harry Meixell, executive director of NATA, explained that the association is now negotiating with insurance companies for insurance coverage to be sold with a specially printed NATA transportation ticket. It was believed that this insurance cost

would run about \$1 for \$10,000 coverage.

NATA, Meixell stated, has developed the air taxi service to meet the unusual needs of the traveler or shipper which cannot be met by carriers by air, rail, highway and water, operating on regular schedules over fixed routes between established points.

While the NATA air taxi program stems from a suggestion made by M. F. Redfern, vice president-traffic and secretary of the Air Transport Association, Meixell plans to extend the cooperation to all forms of transportation.

He stated that improvement in the standards of service and operation of the air taxis will be a constant goal. A code of ethics will be adopted and possibly later a grievance committee will be named to handle any public complaints of unfair treatment.

While no official attempt will be made to establish standard rates among the operators for identical services rendered, Meixell feels sure that something close to standardization of charges will come about through normal business procedures. And he feels that when and if the industry does approach a uniform rate, it will reflect the cost and service experience of the best and most successful of the operators.

Starvation Amid Plenty

The new aircraft procurement program of the Air Force is a matter of starvation amid plenty.

Some aircraft companies have received ample business. They are out of the danger area which threatened them with near-collapse not so long ago.

But it is a mistake to assume that all aircraft companies have benefited from the Air Force program. There are some companies that have been in business a long time that have no orders at all from the Air Force. There are others that have little enough AF business to brag about.

The result of this wide disparity is that some companies have diversified their production to include many non-aviation items. They have become industrial enterprises which are basically aviation but not dependent on their existence for aviation activity.

One notable example of this diversification is Beech Aircraft Corp., Wichita. This company has confirmed to AMERICAN AVIATION that it is manufacturing component parts for such diversified units as cotton-pickers, dishwashers, refrigerators, and other mechanical devices.

In addition to making airplanes for personal and executive use, and for export to foreign governments, Beech has enjoyed a substantial spare parts business from the U. S. Government for Beechcrafts previously made, and has done and is now doing considerable overhaul work for the Navy.

But to keep its employment at top level, Beech has gone into non-aviation work on a large scale. The company points out that no merchandising or credit problem is involved in the manufacture of items of this type, because they are sold only to large well-financed and reputable companies in considerable quantities.

Beech also points out that a diversification of industrial work provides a certain amount of security against a sudden cancellation of business such as occurred after V-J Day and which is provided for in government contracts.

Another Wichita aircraft company, which makes private planes, is doing a big volume of business making furniture. The Wichita firms, except for Boeing's big Wichita plant, have been passed by in Air Force procurement.

Hughes Buys 'Flying Crane'

Federal Judge James P. McGranery of the Philadelphia District Court has accepted an offer of \$150,000 from Hughes Aircraft Co. for the development rights to the Air Force's XH-17 jet-propelled "flying crane" helicopter, under bankruptcy reorganization proceedings for Kellett Aircraft Corp. of North Wales, Pa., which formerly held the jet helicopter contract.

The cash settlement will enable Kellett to pay off its debts and possibly continue in the helicopter business. Kellett developed for the Air Force its largest transport helicopter, the XH-10, and the Air Force is now considering ordering a service test quantity of this model.

Under the terms of the agreement, Hughes will continue development of the XH-17 at the North Wales plant, and will probably employ the same personnel who worked on the project under Kellett. There will probably also be some exchange of personnel between the North Wales plant and Hughes' Culver City, Calif., plant, so that top Hughes engineers may acquire some helicopter know-how.

C-W Pushes Cargo Plane

Taking advantage of the shortage of transport aircraft in military circles, Curtiss-Wright Corp.'s Airplane Division has started an all-out sales promotion program in an effort to interest the Air Force in its CW-32 cargo plane. Their best argument is the fact that engineering work on the plane is already largely completed, and C-W officials claim the plane is two years ahead of

anything available in its field.

These officials estimate that if 34 CW-32's had been used in the Berlin air lift, they could have replaced 80 Douglas C-54's and would have saved 1,200,000 gallons of fuel per month.

Convair Drops Flying Auto

Consolidated-Vultee has officially discontinued its flying automobile project, with an announcement that all rights and patents for the craft have been released to the designer, T. P. Hall. Hall's contract with Convair called for the return of all rights to him should Convair decide to drop the project.

Hall plans to continue development of the flying auto, which is a four-place car with a detachable wing. He is reported to be considering various propositions for its production.

Ryan on Upswing

Ryan Aeronautical Co. is rapidly recovering from the six-week strike of 1000 factory workers which knocked its Navion production from 71 planes in June to 19 in July. Ryan has now hit a new high production level of four Navions per working day, and managed to turn out 61 Navions during August, despite the fact that the results of the strike impaired production for the first two weeks of the month.



Packard Gas Turbine—The Packard Motor Car Co., which is working on several powerplants for aircraft and guided missiles under Air Force contract, has just completed its \$10,000,000 facilities at Toledo, Ohio. Lightweight, gas turbine engines, such as this one being installed on a thrust-measuring test stand, are being developed. Thorough performance investigations require a multitude of thermodynamic measurements as may be seen from the maze of instrument connections.

Advertisers In This Issue

Advertisers	Page
Aircraft Tools, Inc.	45
AIRResearch Mfg. Co., Div. of The Garrett Corp.	40
American Airlines, Inc.	50
American Flyers	36
The Babb Co., Inc.	28, 29
Sendix Aviation Corp.	
Eclipse-Pioneer Div.	2nd Cover
Sendix Aviation Corp., Products Div.	3rd Cover
Douglas Aircraft Co., Inc.	26
Thomas A. Edison, Inc., Instrument Div.	5
Esso Export Corp., Aviation Dept.	22
Fairchild Aircraft Div. of Fairchild Engine & Airplane Corp.	34
Flightex Fabrics, Inc.	49
General Ticket Company	49
The B. F. Goodrich Co. Aeronautical Div.	10
Gulf Oil Corp.	3
Lockheed Aircraft Corp.	24, 25
The Glenn L. Martin Co.	19
Mid-Continent Airlines, Inc.	35
National Airlines, Inc.	41
North American Aviation, Inc.	50
Phillips Petroleum Co.	4th Cover
Pratt & Whitney Aircraft Div. of United Aircraft Corp.	6
Solar Aircraft Co.	30
Southern Airways	45
Sperry Gyroscope Company	9
United Air Lines	32, 33, 49
Wayne Pump Co.	45
Wright Aeronautical Corp.	39

new and used DC-3 and DC-4 parts, equipment and accessories at below cost!

For DC-3 and P. & W. R-1830
parts, accessories and compon-
ents, contact:

M. E. Everhart, Stores Dept.,
United Air Lines, Municipal
Airport, Cheyenne, Wyoming.
Telephone Cheyenne 8931.

For DC-4 and P. & W. R-2000
parts, accessories and compon-
ents, contact:

C. D. Stowell, Stores Dept.,
United Air Lines Maintenance
Base, Bayshore Highway,
South San Francisco, Cali-
fornia. Telephone Juno 8-2424.

Prompt delivery. Guaranteed to
be as represented.



Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications \$1.00 a line, minimum charge \$4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, NW., Washington 5, D. C.

FOR SALE

Hamilton Standard Propellers—23D9 (6101-21). No time since overhaul by Ford Motor Company for AT-11, C18, C45 & D188 Beechcrafts \$99.50 ea. 2D30 (6167A-15) used but in excellent condition \$99.50 each. Blades 6101A-12 at \$39.00 each. Contact Jack Hale, Ohio Aviation Company, Dayton Municipal Airport, Vandalia, Ohio. Tele- phone 44675.

We announce new books—Flight Dis- patcher (Zweng) \$4.00; Link Instructor Rating \$4.00; Flight Navigator Examination included in "Aeronautical Training" price \$3.00; Flight Engineer Manual \$4.00; (Free Catalog) and listing of War Surplus sex- tants, Compasses, Chronometers, Clocks, Astro Compasses, Aerial Cameras, etc. Pan American Navigation Service, 12021-R7 Ventura Blvd., N. Hollywood, Calif.

HELP WANTED

WANTED immediately CHIEF GROUND ENGINEER with A, B, C, D. Licenses for Tiger Moth, L5, Dominie, Super Cruiser; preferably Chipmunk, Station Wagon, Bonanza and Twin engined also. Salary Rs 1,400—50—1,600 plus D.A., Provident Fund, Flying Bonus, 3 years contract after probation.

WANTED also immediately ASSISTANT GROUND ENGINEER on proportionate salary and similar terms as above according to qualifications. Apply, stating experience & qualifications to HONY. SECRETARY, BI- HAR FLYING CLUB LTD., PATNA.

POSITIONS WANTED

YOUNG—ACCOMPLISHED AIRLINE TRAFFIC AND SALES MANAGER

Desires opportunity of presenting a strong and well organized traffic and sales pro- gram to a smaller airline that is "new- business" conscious and sincere about plac- ing emphasis on merchandising within their organization. Top-flight man with wide experience. Available immediately to show you that sound and careful planning can be made to pay off. Box No. 631, American Aviation, 1025 Vermont Avenue, N. W., Washington 5, D. C.

Government Sales. 6 years experience avail- able to capable aeronautical manufacturers needing worker of integrity as Washington Representative. Box 633, AMERICAN AVIA- TION, 1025 Vermont Avenue, N. W., Wash- ington 5, D. C.

SCHEDULED AIRLINE DISPATCHER OVER 10 YEARS EXPERIENCE IN ALL PHASES OF OPERATIONS INCLUDING 3 YEARS IN SUPERVISORY CAPACITY DESIRES POSI- TION IN EXECUTIVE FIELD. BOX NO. 632, AMERICAN AVIATION, 1025 VERMONT AVENUE, N. W., WASHINGTON 5, D. C.

Illinois Aviation: Illinois Dept. of Aero- nautics has started publication of Illinois Aviation, covering developments in the state. Copies available from department's chief of information, Capital Airport, Springfield, Ill.

WORLD'S PREMIER AIRPLANE FABRIC

LIGHTER

STRONGER

SMOOTHER

FLIGHTEX

FLIGHTEX FABRICS, INC. • 93 WORTH ST. • NEW YORK 13, N. Y.

Leading Manufacturers of
Fabric and Tapes for the
Aircraft Industry.

FLIGHTEX FABRIC

Export Representative
AVIQUIPO, Inc.
25 Beaver Street, N. Y.
Cable Add: 'Aviquipo'



quality

We're your licensed and bonded ticket printing special- ists... famous coast to coast for quality, accuracy and dependability! Your order will receive prompt atten- tion. Phone, write or wire!

TICKET PRINTING by

General

GENERAL TICKET COMPANY

Division Cullom & Gertner Co. - 309 Fifth Avenue, N. Nashville 3, Tenn.

AERODYNAMICISTS THERMODYNAMICISTS STRESS ANALYSTS AIRCRAFT DESIGNERS

North American Aviation has a number of excellent openings for engineers qualified in the fields listed. Salaries commensurate with training and experience. Please include complete summary of training and experience in reply.

Engineering Personnel Office
**NORTH AMERICAN AVIATION
INC.**
Municipal Airport
Los Angeles 45, California

FOR SALE By AMERICAN AIRLINES, INC.

43-02 Dittmars Blvd.
ASTORIA, L. I., NEW YORK

- Douglas DC-3 Airplane Parts, Accessories and Ground Equipment
- Wright G-102 (C9GB, R-1820) Engine Parts, Accessories and Components
- P&W R-1830-92 Engine Parts, Accessories and Components

ALSO

- Douglas DC-4 Airplane Parts and Accessories and Ground Equipment
- P&W R-2000-13 (2SD13G) Engine Parts, Accessories and Components (many of which are interchangeable with R-2000-7-9-11 Engines).

These inventories are available for inspection at our warehouses at Astoria, L. I., New York, Tulsa, Oklahoma and Fort Worth, Texas, and offered F.O.B. these points for domestic shipment at very attractive prices.

Prompt attention will be given to all requests for quotations directed to the attention of the Director of Surplus Sales at the above address. Write, Telegraph or Telephone (Haweswood 8-1000).

WINGS OF YESTERDAY

25 Years Ago

The new airport at Jeffries Point, East Boston, Mass., was dedicated Sept. 8, 1923.

During the month of August, 1923, Frenchmen comprised only 2½% of the passenger traveling on French commercial planes. Americans were the greatest customers, providing 53% of commercial air travelers. British were second with 30%, and Dutch third with 6%.

10 Years Ago

(In AMERICAN AVIATION)

General overhauling of the Civil Air Regulations with radical simplification and elimination of all unnecessary rules, was underway by the Civil Aeronautics Authority. Members of CAA and representatives of all the airlines had their first meeting in Chicago on Sept. 6-7, 1938.

Forty-five postmasters and civil leaders from 11 cities in the Sacramento and San Joaquin valleys met in Sacramento on Aug. 29, 1938 to map plans for what they hoped would be the first feeder airline to be established in the country under the CAA.

LETTERS

Guide for Perspective

To the Editor:

It is seldom that any kind of printed comment about anything stirs me to the point of writing letters, but—your editorial in *American Aviation*, Sept. 1, 1948 issue, "Pass The Pills Pappy," is so timely, so sensible, and so well put, that I hasten to congratulate you.

It is to be hoped that all of us, in the industry and among its related government and financial personnel, will clip the editorial and read it at frequent intervals in order to permit your wisdom to act as a governor on our sense of perspective.

WM. W. BRINCKERHOFF, Pres.
Air Carrier Service Corp.
Washington, D. C.

Higher Fares Will Hurt

To the Editor:

Although I and the men with whom I work are salesmen in the freight, rather than passenger, department of an airline we receive daily suggestions and criticisms from travelers upon whom we call when soliciting freight and express business. It is remarkable how many of them believe that it would be just as much of a mistake now to raise passenger fares again as it was three years ago to lower them below our peacetime cost levels.

Most travelers do not hesitate to say that the airlines will price themselves out of the medium-income traveling group. Most of us have received the impression that the airlines would gain much more than a 10% increase in income by keeping the fares where they are and emphasizing comparative air versus first-class rail fares. From what people tell us, we would face at least a 20% loss in volume as a result of our 10% proposed increase.

Does the CAB realize the serious damage its proposed 10% raise would do to the short haul carriers especially? No one in constant touch with the traveling public could possibly believe a raise in rates at this time would help most airlines.

JOHN EICHNER

BOOKS

AIRLINE OPERATION. By R. Dixon Speas. 363 pp., illustrated. American Aviation Publications, 1025 Vermont Ave., N. W., Washington 5, D. C. \$5.00.

Considering the size and the appeal of the airline industry there have been very few books describing it. People who know the industry have not been inclined to write about it, and outsiders generally have not been able to grasp the subject.

It is apparent throughout this book that the author knows his subject and knows how to describe it. His knowledge comes from first-hand experience dealing with industry problems. As an engineering executive with American Airlines he has been in touch with both technical details and broad economic concerns. He has an exceptional grasp of the workings of every department of an airline.

Students of modern air transportation, whether seeking to enter it or attempting to keep-up-to-date on it, will find **AIRLINE OPERATION** the most practical book yet offered. People already in the industry will find it particularly valuable as a source of information on airline departments and functions not directly related to their own work.

The chapter arrangement of **AIRLINE OPERATION** is quite similar to the departmental structure of the average airline. Although flight operations and related subjects receive the most detailed treatment, there are complete chapters on such subjects as Engineering and Maintenance, Airports and Airways, Communications and Meteorology, Passenger Service, Air Cargo and all other major fields of interest.

The book is technical only where necessary, and provides a readable, understandable description of basic functions and responsibilities in the industry. Photographs, charts and graphs are used throughout in conjunction with the text. All performance data and reference material are up-to-date and based on current conditions.

OBITUARY

William A. Winston

Capt. William A. Winston, 52, master pilot with Pan American Airways, died Aug. 25 at Coral Gables, Fla., after a lingering illness. Veteran of about 165 Atlantic crossings, he had logged more than 3,000,000 miles. At time of his retirement from active duty because of illness a year ago, he was PAA's oldest active pilot.

Bendix Products

BUILDERS OF BASICALLY BETTER LANDING GEAR EQUIPMENT



Bendix Segmented
Rotor Brakes.



Bendix Landing Gear
Wheels for all
types of airplanes.



Bendix Pneumatic
Shock Absorbing
Struts for transports.



Bendix Pneumatic
Shock Absorbing
Struts for turbojet
fighters.



Bendix Nose Struts
for transports and
bombers.



Plan With BENDIX

Save Space and Weight

You'll be off to a flying start when you plan your landing gear equipment with Bendix engineers. For Bendix has had many years' experience in the design and manufacture of the finest aircraft wheels, brakes, and struts. You can be positive that every element in your Bendix® landing gear equipment has been precision-built to meet minimum weight and space allowances. Leading plane manufacturers recognize these facts and are specifying Bendix as standard landing gear equipment. Whatever your landing gear problem,

STAMP OF APPROVAL



There's no doubt about it! Products that are used by America's leading airlines have got to be good! They must live up to high standards of performance and dependability.

When you choose a high-octane gasoline to fuel your own plane, and a highly-refined motor oil to keep it running smoothly, let your choice be guided by the choice of experts in the field of aviation . . . experts who have set their seal of approval on Phillips 66 aviation products.

You can buy and use . . . with confidence . . . any product bearing the Phillips 66 flying shield!

Aviation Dept., Phillips Petroleum Company, Bartlesville, Okla.



AVIATION GASOLINE